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ORIGINAL COMMUNICATIONS.

REMARKS ON THE OBSTETRIC FORCEPS, WITH A DESCRIPTION AND DEMONSTRATION OF TARNIER'S NEW INSTRUMENT.[1]

BY
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In my remarks this evening, I shall endeavor to bear in mind that I am not addressing a class of medical students, but that I am before a learned society, a body of educated and experienced men. I shall, therefore, aim to avoid taking up your time by enunciating elementary principles or discussing doctrines which the science of the present day has discarded.

All are aware that there has been a remarkable and progressive change in obstetric science, since the early part of the present century, as regards the propriety and necessity of the use of the forceps, and especially is this true of teachers and writers in the English language. It is well known that early teaching was to the effect that the forceps should not be used except under circumstances where it became conclusive that without the instrument, delivery of the woman could not be effected. This was the law as laid down, and strongly emphasized by detailing the symptoms which alone could justify their use, by such great authorities as Hunter, Denman, Osborne, Clarke, Collins, Lee, and other writers of that day. Their practice was in harmony with their teaching, as Clarke used the forceps only once in 742 cases, Collins once in 617, Ramsbotham once in 729. In the memoirs of Dr. Joseph Clarke, by Dr. Collins, it is stated that he "only used the forceps once in the multitude of cases under his care in private," and then he did not succeed in delivering the child.

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[1] A discourse delivered before the N. Y. Academy of Medicine, Oct. 18, 1877.

There is a marked change in the teaching of later writers, such as Davis, Dewees, Rigby, Ramsbotham, Meigs, Hodge, and Churchill, as to the indications which required their use, but they were so over-weighted by the influence of their predecessors that they negatived their wise inculcations by their warnings of danger in the use of the instruments. Hence, we find but little change in practice, as to frequency in the use of the instruments, as Ramsbotham applied the forceps in only 1 case in 729, Churchill 1 in 546, Lever 1 in 518, while Beatty, who was the pioneer in advocating a more frequent use of the instrument as a safer mode of delivery, than the methods then in vogue, both for mother and infant, only resorted to their use in 1 case in 131. The contrast is very striking between these Anglican obstetricians and their continental contemporaries, as Naegele delivered with the forceps 1 woman in 31, Caro 1 in 14, Siebold 1 in 7. We may note the fact also, that Clarke delivered by craniotomy 1 case in 148, Collins 1 in 141, Churchill 1 in 149, while craniotomy was found necessary in the practice of Naegele in only 1 case in 1,711, and in that of Siebold in only 1 in 2,093.

Now, if we search for the reasons why our great obstetrical authorities in English literature had such a horror of the forceps, I think it will be found chiefly in the three following facts:

1st. They were ignorant of the mechanism of labor. The philosophical studies of Solayres in this direction, developed and clearly brought out by his pupil Baudelocque, and nearly perfected as a science by Naegele, were unknown to Hunter, Denman, Collins, and Clarke, who were the master-minds that gave the coloring to the teaching in this point to their successors. The practice and the precepts of Smellie were forgotten or carried no weight.

2d. While they greatly exaggerated the danger to the mother and the child from the use of the forceps, they did not recognize the danger, which results to both, from prolonged labor.

3d. They confounded the difficulty and skill demanded in their use, in the comparatively few cases where they are required when the head is at or above the superior strait, as being equally true in the many cases where we now use the instruments when the head is low in the pelvic cavity or at the outlet.

It would be an interesting and not unprofitable study to trace out the causes which had contributed chiefly to bring about the change in professional opinion and practice. A scientific comprehension of the mechanism of parturition taught the intelligent and instructed obstetrician how to detect and remedy, by the use of the forceps, many of the obstacles which retard or prevent the completion of labor.

Burns, more strongly and more justly, pointed out the dangers to the mother which results from delayed labor, than any of his predecessors among English authors had done. He first emphasized the fact that the continued pressure of the head on the soft parts is productive of further diminution of the capacity of the pelvis, for inflammation is excited, and, at the same time, the return of the blood by the veins, and of serum by the lymphatics is obstructed, and that this swelling of the soft parts contained within the pelvis may take place, although the head be not impacted, while the head cannot long be impacted without producing this result.

The first paper which boldly took the ground that the forceps is not a dangerous instrument, was by Dr. John Beatty, of Dublin, and was published in 1829. In this paper he states that in his private practice he had used the forceps in 105 cases, and that in no instance did any unpleasant result follow. None of the mothers died, none of them had their perineum lacerated, nor any of those evils which are set forth as the effects of the forceps, and still more, all the children, where there was any reason to think they were alive at the commencement of the labor, were born living, and none of the whole number had any injury or mark whatever inflicted by the instrument. In a volume of *Contributions on Medicine and Midwifery*, by his son, the late Dr. Beatty, of Dublin, it is stated that for a period of fully forty years, including a period before and after the publication of this paper, the forceps were banished from practice in Ireland. Apropos to this paper, I will mention a curious and amusing anecdote told me at his dinner-table, twenty years ago, by the late Professor Montgomery, of Dublin. He said that in the early part of the century, Dublin obstetrics was ruled by a few autocrats, whose authority was so unquestioned, that no one else presumed to write on the subject, or dared to express an opinion not in accordance with their views. Immediately after the publication of the paper by Dr. Beatty, he received a challenge to mortal combat from one of the most eminent of these obstetricians, who deemed the paper, although it made no allusion to the practice of any one else in that city, an injurious reflection on his teaching and practice.

In a period of twenty-five years a remarkable change took place in the practice of the Rotunda Lying-in Hospital of Dublin. Under the mastership of Labatt, from 1815 to 1822, there were 21,867 births in the hospital, and there is no record of the forceps having been used in a single instance; while under the mastership of Shekelton, from 1847 to 1854, there were 13,748 births, and the forceps were used 220 times, or once in every 62 cases.

A paper by the late Sir James Y. Simpson, in which he aimed to demonstrate by statistics, that the natural and the infantile mortality attendant upon parturition increases in ratio progressive with the increased duration of the labor, contributed greatly to awaken obstetricians to the danger of delay. In 1858 I read a paper before the Medical Society of the State of New York, that was published in the volume of *Transactions* for that year, which was severely criticised on the ground, that by implication it inculcated a dangerous frequency in the use of the forceps. At the present day it would be regarded as exceedingly temperate in its advocacy of the forceps.

Since 1860 many able papers have appeared on this subject, all of which, without exception, have urged a more frequent use of the instrument, and a very marked change of teaching is manifest in the works of systematic authors in the English language, who have written since that date. The remarkable series of papers by Dr. George Hamilton, of Falkirk, Scotland, are well known to the profession, because they appeared in such widely circulated journals as the *British and Foreign Med.-Chir. Review* and the *Edinburgh Medical Journal*, and this series of papers must have greatly influenced the change in practice. But the elaborate paper by Mr. Philip H. Harper, published in the first volume of *Transactions of the London Obstetrical Society*, is not so well known, because the early volumes of *Transactions* have, as a rule, but a limited circulation. I know nothing of the writer personally, but in my judgment this is the most able paper which I have read as to the safety and duty of more frequent use of the forceps, and I have been greatly surprised to see that subsequent systematic authors have so seldom referred to this paper which covers the whole ground. I can only make a passing allusion to the papers by Dr. James Hardie, of Manchester, published in the *Edinburgh Medical Journal* in 1866, and the very able and convincing paper, by Dr. George H. Kidd, in the *Dublin Journal of Medical Sciences* in 1872. Probably no reports made from the Rotunda Lying-in Hospital, of Dublin, have so surprised the profession, or have so influenced it in regard to the use of the forceps, as those of its late distinguished master, Dr. George Johnston. In seven years, from Nov., 1868, to Nov., 1875, in 7,027 deliveries, the forceps were used in 639 cases, averaging 1 in 11 cases. In the last year of his mastership, the forceps were used in 1 in 9 cases. In the whole seven years, the operation of craniotomy or cephalotripsy was resorted to in only 29 cases. In one year, from Nov., 1873, to Nov., 1874, the forceps were used in 138 cases, and there was not a single craniotomy. These reports demonstrate that the mortality to mother and child is lessened as the instrument is more frequently used, while the more repulsive and dangerous operation of craniotomy is reduced to a minimum.

During the past year my friend and former pupil, Professor E. S. Dunster, of the University of Michigan, has published a paper on the use of the forceps in abbreviating the second stage of labor, in which he has given a most excellent *résumé* of the recent literature on this subject, and has also presented, in a logical and convincing form, a series of arguments in favor of a more frequent use of the instrument. This paper ought to have a much wider circulation in the profession than I fear it will receive, from the fact that its publication is chiefly limited to the *Transactions* of a State Medical Society.

The plain practical question to be settled by the accoucheur in every case is, which is safer for the mother and the infant, the use of the forceps or the delay of labor? I think all intelligent men will agree that the science of the present day has settled the point, which decides this question in a large majority of cases, viz., that there is no danger in the use of the instrument where there is no such disproportion between the diameters of the fetal head and the pelvis as to make delivery impossible, without injury to the maternal structures or dangerous compression of the fetal cranium, provided the operator is an expert who has chosen wisely his forceps and thoroughly comprehends the mechanism of labor. A voice suggests, "laceration of the perineum," which implies, I suppose, that is a danger to be apprehended from the use of the instruments. Now my own opinion is that the forceps, when properly used, is an instrument that preserves the perineum much more frequently than it causes its rupture. The danger of laceration is very much increased by long-continued pressure of the head of the child against the soft parts of the mother. If the vulva be so narrow that the head cannot pass without laceration, of course laceration of the perineum will occur, even though the head be allowed to pass through unaided by art. My practice is, when the vulva is fully dilated, to remove the forceps, and then introduce the fingers into the rectum and pull the head forward and thus deliver. I never complete the delivery by rapid removal of the head through the outlet, by traction with the forceps.

But I have no intention at the present time to discuss details as to the mode of using the instruments, for if I should, the wisest thing that I could do would be to read the directions given by Dr. Barnes in his unique and most valuable work on the Obstetric operations, which I assume all members of this Academy have carefully studied.

We all must agree that there are dangers in the use of the forceps when the fetal head is at or about the superior strait; danger of injuring the soft parts of the mother by making traction in the wrong direction, and of too violent pressure of the head. The question to be considered is, whether the safety of the mother and child is not greatly increased by early delivery, rather than by the following the teaching of the older writers, who never used the long forceps, but always resorted to the perforator and craniotomy, thereby inevitably sacrificing the life of the child.

There are three essential points to be considered with reference to delivery from the superior strait: 1. The operator should thoroughly comprehend the cause which renders this mode of delivery necessary.

2. The mechanism for overcoming that cause should be thoroughly understood. The operator must know perfectly what the relation is between the diameters of the fetal head and the diameters of the pelvis through which it is to pass, in order that he may know how and when to change the direction of the tractions.

3. The operation should be performed slowly. I am never less than a half-hour in bringing the head down from the superior strait, and in some instances I have been a full hour.

Finally, in safe delivery from the superior strait, very much depends upon the instrument employed. My own preference is for Simpson's forceps; but in some rare cases, where the head is above the strait, the forceps known as Dubois' or White's is undoubtedly better.

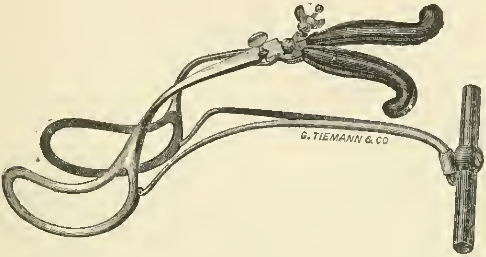
I have not the time now to discuss the amount of compression that the fetal head will safely bear. I will only remark that a compression continued for a sufficient time on a fixed point of the sides of the head, to mould its form, may be perfectly safe, while the same degree of compression suddenly made over the whole extent of the transverse diameters of the head, by the slipping of the instrument, would prove fatal. It is therefore of the greatest importance that the form of the blades should be such as will best secure the hold of the head, and that the blades should have sufficient strength. Strength is safety, weakness is danger. I have seen many instruments which have seemed to me defective as regards one or the other of these points.

It was not my intention to speak of my personal experience and practice, but in response to the call I have no hesitation in saying that in my private practice during the past twenty-five years, I have used the forceps in one case in fifteen. For the last ten years, my average has been one in every twelve cases. I have never, in a single instance, had occasion to regret their use, but when reviewing my cases at the termination of the labor, I have often felt that I should have done better if I had used the instruments at an earlier period of the labor. But one of my private patients whom I have delivered with the forceps has died during the puerperal period, and in this case, the convalescence was perfectly satisfactory, until the sixteenth day after labor, when she was attacked with phlegmasia dolens, from which she had so far recovered as to go out for a drive. On the thirty-fifth day on rising from bed to dress, while pulling on her stockings, she suddenly fell over, the face became purple, and she made violent gasping efforts to breathe, and died within an hour from the time of the attack.

In not a single private patient have I had laceration of the perineum, from the use of the forceps, occur to such an extent as to require subsequent surgical treatment. I speak confidently when I assert that not in a single instance has the forceps caused the death of the child. I may add that in private practice during this period of twenty-five years, I have never once had occasion to resort to craniotomy or cephalotripsy, and that in twenty-two years of service in Bellevue Hospital I delivered but four women by craniotomy.

On the table before you there are sixty-seven different forceps, many of them furnished by the courtesy of Mr. Stohlman and Mr. Ford. You will see an exact copy of the original instruments of Chamberlen, with the many modifications which have been suggested by the ingenuity of different obstetricians, each of which the inventor probably supposed would immortalize him. It is interesting to study them as historical curiosities.

But this instrument which I now show you, devised by M. Tarnier, Surgeon-in-chief of the Maternity Hospital at Paris, is now exciting great interest and warm discussion in that city. The theory of the instrument may be thus briefly stated. M. Tarnier claims that when the head is at or above the superior strait, with the forceps in ordinary use, it is impossible to make traction in the exact axis of that strait, because of the resistance to the direction of the handle of the instruments by the perineum. It is necessary to make traction in a line somewhat forward of the axis of the superior strait, hence, a certain amount of injurious force is necessarily wasted against the posterior surface of the symphisis pubis. In Tarnier's instrument this is obviated by a posterior curve in the blades, which permit traction to be made in the axis of the superior strait without making undue pressure backward on the soft parts. You will observe that traction is made by means of independent rods which are attached to the posterior border of the blades of the instrument, and terminate in a cross-bar just beyond the handles. The instrument is no more difficult of application than the ordinary forceps. The blades are locked and the amount of compression is regulated by this cross screw —a feature of the instrument which I wish could be obviated, because I believe that the degree of compression should be always perceptible and controllable by an intelligent hand. When the instrument is applied to the fetal head at the superior strait, traction is first made downwards and backwards, but as the head approaches the cavity of the pelvis, the handle of the forceps begins to rise, thus indicating in what direction traction should be made to correspond to the axis of the pelvis, through which the fetal head is passing. As the handles rise, the tractor is brought up to it, and so we have an automatic indicator which gives direction to the force of the operator. Hence, the instrument is named *forceps à aiguille*, or needle-forceps, in the same sense as we speak of the needle of a compass. Another merit of the instrument claimed by M. Tarnier is that it allows the fetal head such mobility as to admit of its passing through the pelvis and soft parts in the varying position which



it would assume during a natural labor. Ordinarily its movements are governed by the forceps and the direction of the tractions.

I had hoped to be able to demonstrate the action of the instrument before you this evening, but I am unable to do so because I can find no manikin in the city, with the caoutchouc lining of the cavity and perineum by which the changes in position of the fetal head produce the corresponding changes in the direction of the handles. By the courtesy of M. Tarnier and M. Pinaud, *ex-chef de clinique des accouchements*, I had a most satisfactory demonstration and trial of these forceps with a fetus and caoutchouc manikin, and the impression left on my mind was that this instrument would prove highly useful in a certain class of cases, and that it was a positive contribution to obstetric art.

I have as yet had but one opportunity to test these forceps in actual practice. The patient was a lady from Chicago, who had once been delivered by craniotomy. There was a slight contraction of the antero-posterior diameter. After many hours of labor I found that the head did not engage in the superior strait, while the safety of the mother demanded that there should be no longer delay. I applied Tarnier's forceps, in this case much easier I am sure than I could any other; but unfortunately the only result I could obtain was to change a vertex to a face presentation, which did not at all aid in accomplishing delivery. You see by this demonstration how this came about, for the head was necessarily seized near the frontal extremity of the occipito-frontal diameter, and the result must have been the same, had I used the forceps of Dubois. I then decided to deliver by turning, and the result proved that it was most fortunate that I had not been able to deliver the head by the forceps. After version was completed, the trunk of the child was so enormously large (I do not remember ever to have seen a larger), it required all the force of my friend and partner, Dr. Smith, and myself to extract the buttocks and the body of the child. The head was by far the easiest part of the child to deliver. By this method, I delivered a perfect and unmutilated child; but if I had been successful in delivering the head by the forceps, the body could only have been extracted by cutting it to pieces.

I will only say in conclusion that time and experience can alone determine the real value of the instrument devised by the distinguished French obstetrician.

OVARIAN DYSPEPSIA.

BY

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THE title of this paper is brief, and perhaps a more accurate but long and clumsy title would be "A Form of Dyspepsia induced and kept up by Irritation arising from the Ovary," *i. e.*, disturbance in the stomach may be excited reflexly by irritation situated in another viscus. No attempt will be made here to enter into the literature of ovarian disorders. It is enough to say that the various maladies of the ovary, other than gross organic changes, as cystic tumors, have not received the attention they merit. Barnes has referred to them in his recent work on the Diseases of Women (quoting Charcot and Negrier), and Lombe Atthill has worked at them. The attention of the writer was drawn to the subject in a roundabout rather than a direct way.

It will perhaps place the subject most clearly before the reader to relate briefly how it came about. It was observed that a large number of the patients attending the City of London Hospital for Diseases of the Chest, with consolidation of one or other apex, night sweats, a heightened temperature, loss of flesh, and the other symptoms of phthisis, had a good family history. The patient too often had a good physique, and the lung mischief might fairly be set down to accidental causes rather than a family predisposition to phthisis. This was a very unsatisfactory state of matters, and it was evidently desirable to investigate the cases further. The two main concomitants of these cases of phthisis were soon seen to be dyspepsia, with leucorrhea and menorrhagia—a combined condition common with women. Here there were linked a defective body income with an excessive body expenditure, producing a condition of general malnutrition, just the condition favorable to the development of tubercle. For some time it was thought that this association of dyspepsia and disturbance in the sexual organs was a mere casual one. It appeared that the leucorrhea had existed some time with or without menorrhagia, and then that the stomach became disturbed, and a dyspeptic condition established. But a little further attention to the subject soon showed that the connection was much more decided than this. It was seen that the condition was not merely one where the system had for some time been taxed by a heavy body-expenditure, against which it had kept up as long as the nutritive processes were efficiently carried on; and then that from some cause, psychical or physical, disturbance of the digestion was set up, and then the nutrition distinctly failed. With an impaired nutrition the system could no longer withstand the excessive expenditure, and then tubercle followed. This explanation was sufficient as regards the genesis of tubercle, but was insufficient and unsatisfactory in other respects. The connection of gastric disturbance with irritation in the genito-urinary system stood in a very suggestive relationship to this complex condition. It is well known that vomiting is a constant symptom of a calculus in the pelvis of the kidney. The vomiting of the early months of pregnancy when the embryonic muscular fibres of the uterus are commencing to develop and take on a more active condition, has been long a notorious fact. It soon became clear that there was some condition existing which stood in a causal relationship to both the dyspepsia and the uterine disturbance. That condition was quickly seen to be a state of vascular excitement in one or both ovaries, usually the left ovary. This condition Barnes terms "oophoria."

In this state there is always more or less pain constantly in the iliac fossa, more rarely on the right, much aggravated at the catamenial periods, when the pain shoots from the turgid ovary down the thigh of the corresponding side along the genito-crural nerve. This painful state is otherwise known as "ovarian dysmenorrhea." When pressure is made over this tender ovary during the catamenial flow, acute pain is experienced. Pressure also elicits pain during the intermenstrual interval. At the same time that acute pain is felt, evidence is furnished of emotional perturbation, the patient feels as if about to faint, or "feels queer all over," as some express it, and the changes in the patient's countenance speak of something more than mere pain, pure and simple. It is evident there is a wave of nerve-perturbation set up, which excites more than the sensation of pain. Commonly the patient feels sick after the momentary pressure, and asks to be permitted to sit down, alleging that she feels sick and faint. If a careful physical examination be made it will be found that there is an enlarged and tender ovary, which may sometimes be caught betwixt the finger in the vagina and the fingers of the other hand applied to the abdominal wall over the ovary. Such manipulation elicits manifestations of acute suffering from the patient. Frequently the rectus muscle over the tender ovary is hard and rigid, so as to place the organ as perfectly at rest as is possible: just as we see the rectus to stiffen and become rigid over the liver when there is an hepatic abscess and thus to secure rest, as regards movement, for that viscus.

We have then a morbid condition of a very important, if small organ, and can comprehend how this can set up waves of nerve-perturbation which will be felt in distant organs. The disturbances so excited are not the same in all cases. The wave so set up may break on several points. In one the stomach is perturbed, in another palpitation is induced, in a third a neurosal cough is excited; in almost all there is neuralgia of the sixth or seventh intercostal nerve, I believe always, or very frequently, to be quite safe, on the same side as the affected ovary. Certainly left side intercostal neuralgia is much commoner than right side neuralgia of the intercostal nerves; as much commoner as left oophoria is than right oophoria. It appeared that the nerve-currents set up in the ovary travelled along the dorsal ganglia till the splanchnics were reached, and then their force was most felt in the intercostal nerves at the point where the greater splanchnics run off. When talking the subject over one day with Dr. Mitchell Bruce, he reminded me that the nerve-fibres of the splanchnics were descending fibres chiefly. My hypothesis is this: the currents ascending from the ovary, of which some reach the brain as sentient pain, possibly along the spinal cord, possibly along the sympathetic, are met by the descending currents passing into the greater splanchnics, and driven off thereby on to the neighboring intercostal nerves, the sixth or seventh. The perturbations set up in the ovary are thus felt in the terminal fibres of these intercostal nerves as gusts of neuralgic pain.

At the same time there is uterine disturbance excited. Usually the womb is heavy and turgid, and the os patulous or uneven and harder than usual. There is commonly menorrhagia; there is always leucorrhea. Less frequently there is a condition of imperfect or lessened menstrual hemorrhage, with a persistent and profuse leucorrhea. Not rarely, too, there is set up a very distressing condition, viz., that of recurring orgasm. This occurs most commonly during sleep, "the period par excellence of reflex excitability." In more aggravated cases it also occurs during the waking moments; and this it does without any reference to psychical conditions. It is found alike in the married woman cohabiting with her husband, and in spinsters who might be suspected of regretting their involuntary continence. It is not certainly due to repression of the sexual instinct. My experience is clear about that. Woman is much calumniated as to the origin of many of her troubles. When this condition of recurrent orgasm is established, it at times leads to a still more distressing condition, viz., a state at once of weakness and irritability of the bladder centres in the lumbar portion of the spinal cord. The centres of the pelvic viscera lie near together in the cord, and the condition of one is readily communicated to another. The brief recurrent orgasm affects the bladder centres, and the call to make water is sudden and imperative, and must be attended to at once, or a certain penalty be paid for non-attention. This last is not a common condition, fortunately, but it is a source of great suffering, mental and bodily, when it does occur. The condition of the ovary also acts reflexly upon the uterus, and keeps it in a state of persistent erection and high vascularity, with the normal phenomena attendant thereupon. This enables us readily to comprehend the uterine associations of this complex malady, both as regards the leucorrhea and the menorrhagia. That sometimes, instead of menorrhagia there is a condition rather of intensified leucorrhea than a true menstrual flux, is what we can readily understand. The rhythmic wave of supplemental nutrition, which reaches its climax in the menstrual hemorrhage, is sorely interfered with, and instead of an escape of blood, there is a flow of fluid scarcely tinged with blood. The starved organism is no longer equal to the periodic hemorrhage. Nevertheless the accumulated discharge during each month is far beyond the sum total of the generative expenditure of a perfectly healthy woman. So much for the uterine half of the complex condition.

Now for the gastric side of the question. The stomach contains sympathetic nerve-fibres, isolated nerve-ganglia, with some fibres of the pneumogastric. These last fibres have an antagonistic or inhibitory influence over the sympathetic fibres of the stomach; the sympathetic fibres produce contraction of the blood-vessels, the pneumogastric fibres tend to produce dilatation. Thus Claude Bernard found that section of the gastric branches of the vagus stopped digestion, and that the mucous membrane of the stomach, previously turgid with blood, became pale and ceased to secrete. Further, "the influence of the pneumogastric nerves over the secretion of gastric fluid has been of late even more decidedly shown by M. Bernard, who found that galvanic stimulus of these nerves excited an active secretion of fluid; while a like stimulus applied to the sympathetic nerves issuing from the semi-lunar ganglia, caused a diminution and even complete arrest of the secretion." This quotation is not from any recent work on physiology, but from an old edition of the text-book of the late Senhouse Kirkes. These experiments of M. Bernard have been performed by others with like results. Thus we see that the effects of a stimulus, applied to the sympathetic nerves of the stomach, cause a diminution and even complete arrest of the gastric secretion. Is there any difficulty then in comprehending the relations betwixt dyspepsia, and an irritable condition of an organ with which the stomach is in intimate connection through its sympathetic fibres? The relations of dyspepsia to a disturbed ovary become clear enough. The irritation set up in the ovary traverses the sympathetic fibres and arrests the flow of gastric juice, more or less thoroughly, and dyspepsia is the consequence. The action of the sympathetic nerve-fibrils is to excite contraction of the arteries and arterioles; that of the pneumogastric fibrils to dilate them.

Persistent nerve-currents coming up, the sympathetic nerve-fibrils excite them, and contraction of the blood-vessels is the result. The termination of the nerve-currents starting from the ovary is the contraction of the gastric blood-vessels. Just as we know that perturbations set up by a calculus in the kidney, or the growing uterus, will flow on until they reach the stomach and cease in the act of vomiting. The dyspepsia is then the direct and immediate consequence of the ovarian irritation. The disturbance of the stomach is due to far-away irritation—it is not primary, but reflex.

This condition of contraction of the gastric blood-vessels, with arrest of the gastric secretion, leads to dyspepsia, and the imperfect digestion of the food taken. In the act of digestion the blood-vessels of the stomach dilate, the mucous membrane becomes turgid with blood, and the secretion of gastric juice is abundant. These waves coming up, the sympathetic fibres disturb these processes, the dilatation of the blood-vessels is interfered with, the secretion of gastric juice checked, and impaired digestion follows. Thus we can see distinctly enough the gastric factor of this complex condition.

The dyspepsia and the uterine flux are alike the consequences of a condition standing to each in a causal relationship. The imperfect body income and the increased body expenditure alike arise from and are excited by a certain condition of the ovary.

How the ovary becomes affected in the first instance it is not easy to say. Following the suggestions of John Williams that in these cases there had always existed a certain amount of pain at menstruation from its first initiation, a series of inquiries were instituted. In a certain proportion of instances such seemed to have been the case. But in the bulk of cases there was no such history, and the disturbance dated from a definite point. In many this was a miscarriage, in others an acute illness, in a few marriage, and in middle-aged women getting near the end of their reproductive life, commonly a confinement. In young women in their 'teens it seemed due to an excess of the usual ovarian excitement set up by the changes of puberty; in not a few from the effects of working treadle sewing-machines, the evil effects of which on some girls are now notorious. The most difficult part of the entire subject is the etiology.

Once this condition of the ovary established, then a whole train of disturbances follow in its wake. In some cases there is a neurosal cough, a pharyngeal cough, identical in its reflex nature with the cough of pregnancy, known in Scotland as "a cradle cough." In others there is palpitation, as reflex in its nature as the palpitation induced by a prolapsed uterus, and which is relieved as soon as the uterus is replaced in its normal position. The wave of nerve-perturbation set up in the ovary passes onward till it reaches a terminus where its vibrations excite local disturbance. When the brunt of this wave falls upon the stomach it produces contraction of the gastric arterioles with defective secretion of gastric juice; the digestive act is imperfect, and imperfect assimilation and nutrition follows. These perturbations, too, affect the normal contractions of the stomach in the digestive act, and instead of the ordinary movements of digestion, such contractions as produce vomiting are excited. Such is the true pathology of those cases of obstinate vomiting, or rejection of food, as it is often termed, seen in girls of from nineteen to three or four and twenty years of age, with which all experienced practitioners are familiar. These cases are productive of great suffering and distress. The medical attendant is nearly worried out of his life; the friends of the patient are worked up to a point of feverish anxiety; the sufferings of the patient herself are not inconsiderable; and so the case wears on for weeks. The vomiting persists; the moment any food is taken into the stomach and the digestive act commences, the food is rejected, and, in despair, feeding by the rectum has to be adopted. As remedies, bismuth, opium, hydrocyanic acid, effervescing mixtures, champagne, milk and soda-water, beef-tea, hot and cold, raw meat pounded, all are tried and fail—are abandoned in despair, and nutritive enemata are the last resort. All who have seen much of practice are familiar with these trying cases, which seem to go on unaffected by remedial measures, until the malady seems to wear itself out; to be succeeded by a long and tedious convalescence. It would seem that at last the condition of general mal-nutrition starves down the congested ovary till it ceases to set up and send out those perturbative nerve-currents which excite the gastric disturbance. Then the stomach settles down and resumes its ordinary duties once more without disorder. The case lingers on unrelieved because its real pathology is not recognized. The stomach is treated, and not the ovary. The gastric disturbance is not primary, but reflex. Its causation must be comprehended, and the treatment directed accordingly, and then improvement will follow.

An illustrative case may be mentioned. It is not so well marked as the aggravated case just given in the above sketch; for these cases are only met with in private practice in their most developed form. A girl of twenty-two was sent into the West London Hospital as a case of long-continued retching and vomiting. The house surgeon gave her an effervescing mixture containing hydrocyanic acid, which gave some relief. The girl was pale and anemic, with lack-lustre eyes, and a peculiar expression about her which made me at once feel sure that she was the subject of ovarian disturbance. It was found at once that the left ovary was congested and exquisitely tender, pressure over it almost leading to syncope. There were also menorrhagia and leucorrhea. The ovary was treated, and in ten days the girl left the hospital well; but I doubt if permanently cured. And yet this stomach had been treated nobody knows how long without avail.

What is the treatment of these cases? It consists of several factors, each essential and complementary to the other. In the first place the bowels must be thoroughly opened. Any load in them will always increase pelvic congestion. They must be well opened every morning and also emptied at bedtime. It is very bad for these cases to have any load in the lower bowel during sleep. The best purgative is sulphate of magnesia. It may be given alone or with aloes. Aloes in small doses excites the hemorrhoidal vessels, in full doses relieves them. Mineral waters containing sulphate of magnesia may be used. Free purgation should be first set up, and then an open condition of the bowels maintained. If the stomach rejects all medicines, they must be given in enemata. But by means of a hypodermic injection of morphia in a full dose, the stomach can usually be soothed into tolerating medicines. If necessary, a morphia suppository at bedtime may be ordered. Purgation acts directly upon the ovary and lowers its excitability.

Then comes the treatment of the reflexly excited disorder. It is obvious that such remedies as bismuth and hydrocyanic acid act locally upon the stomach, and so, though no doubt of value, are after all but palliative measures. Instead of treating the stomach it is necessary to act upon the nerve-tracts, along which the perturbing nerve-currents travel. For this purpose the great therapeutic agent is bromide of potassium. It affects (as pointed out at length in the Practitioner's Handbook of Treatment) alike the peripheral ends of nerves and nerve-fibres; it blunts the nerve-endings; it lessens nerve conductivity while it lowers central receptivity.

By its use in full doses the excitement in the ovary and the perturbative waves set up thereby are diminished; and the path obstructed so that by the time the wave has reached the stomach it is greatly reduced in force; and perhaps never reaches the stomach at all, but gets lost on the way. The formula in ordinary use is as follows:

Mag. Sulph.	ʒ i.
Potass. Bromid	℈ i.
Inf. Gentian	℥ i.

three times a day; with an aloes and myrrh pill at bedtime, if necessary. The gentian acts beneficially on the stomach, as all bitters do, and renders it more tolerant of the medicines. A vehicle for the chief remedial agents need not be taken haphazard, but selected.

Counter-irritation is very useful. A blister may be placed over the tender ovary. It should be put on as the first step. It certainly affects the patient's mind favorably, and it does positive good physically. It usually produces such an impression that the medicines given by the mouth are tolerated by the stomach. As to how such counter-irritation acts we do not yet quite know. But we are well assured that it does act and efficiently too. Probably one nerve-wave may meet and neutralize another, like rays of light. Ferrier (The Functions of the Brain) writes, "Though, as a rule, the summation of stimuli increases the reflex action and makes it more general, this is only true of stimuli conveyed to the same part of the cord (Wundt). If, on the other hand, a sensory nerve in some other part of the body is simultaneously irritated, then the reflex action which would otherwise result from the first stimulus is altogether restrained or inhibited (Herzen, Schiff)." The impressions or nerve-currents excited by a blister over the ovary and outside the abdominal wall, would necessarily travel some distance before they meet those set up within the ovary. An ordinary fly blister, two inches square, suits very well. It perhaps produces the best effects when placed right over the tender ovary. In two instances a crop of boils followed the blister. But this is less than one per cent. of all the cases.

By such means the disease must be treated. There remain the increased body expenditure and the imperfect body income still to be considered.

For the first—the vaginal loss—injections of astringents in solution by means of a Higginson's syringe, or the small india rubber ball and tube used to give babies enemata (much better in every way than a glass syringe) must be used twice a day, with hip baths daily, if the patient's condition will admit of it. This is far from unimportant. When there is menorrhagia, quietude and the avoidance of all warm drinks and food during the flow are desirable. For the latter—the imperfect digestion —light and easily digestible food, milk, if necessary, combined with an alkali, or beef-tea with a little cream in it, or custard, are indicated. Such food should be given at short intervals, and small quantities at once. The irritable stomach will often retain small quantities of food when larger amounts are at once rejected. But after all this last is but the palliative treatment of these cases; they are not primary stomach affections, they are truly reflex, and the origin of the malady must be ascertained, after which comes the appropriate and essential treatment. So frequently does dyspepsia in women depend causally upon ovarian mischief, that the writer now always commences by eliminating the ovarian factor before treating the malady as a pure stomach affection.

OBSERVATIONS ON PSEUDOCYESIS, AND ON PREGNANCY IN ITS RELATION TO CAPITAL PUNISHMENT.[1]

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THE title of this paper may be considered somewhat technical, inasmuch as it is an appellation not very commonly employed in obstetric or gynecological literature. *Pseudocyesis* is derived from the two Greek words ψευδης, false, and κύησις, pregnancy, meaning therefore literally, *false pregnancy.* Translating the term more liberally, I use it to express that condition of mental aberration in which a woman falsely believes herself pregnant, and frequently persists in this false belief contrary to reason and to the most positive statements of competent medical counsel. I do not mean to include under this designation that class of cases of spurious pregnancy in which the uterus contains a mole, hydatids, or diseased growths, causing such enlargement and other signs of gestation as to occasionally perplex and even mislead the experienced practitioner. The relatively few who have written upon this subject have adopted in the main the restricted definition above given.

In order to illustrate my views concerning pseudocyesis, and to furnish a text for my remarks concerning that affection, I have selected three cases which I beg to narrate. I have chosen these particular cases also with a view to represent the different social conditions of the parties affected, as well as the phases of the disorder in question. The first was that of a young woman who had never been married, the second was at the menopause and married, the third also at the menopause, but a widow.

CASE I.—I well recollect having often seen this patient at Blackwell's Island Hospital when, many years ago, I attended clinics in that institution. She was of American birth, single, about twenty-five years of age, and believed implicitly in her pregnancy. And, indeed, she presented to the ordinary observer the appearance of a woman advanced to the eighth month of utero-gestation. Having secretly incurred the risk of pregnancy, and presenting what to her seemed indubitable evidence of its existence, it was impossible to convince her of the contrary. Menstruation had ceased, and abdominal enlargement had been progressive. Moreover, she felt distinctly movements which she confidently believed to be those of the child. But when put profoundly under the influence of chloroform, the enlargement speedily collapsed, leaving no indication whatever of pregnancy, and showing conclusively that the inflation was in reality a variety of "phantom tumor." Upon recovering from the influence of the anesthetic she would again become rapidly inflated as she returned to a state of consciousness.

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[1] Read before the Cincinnati Obst. Soc., July, 1877.

CASE II.—Several years ago I was consulted by a married lady, still residing on Betts Street, in this city, in reference to her approaching confinement. Indeed, I was consulted more for the purpose of engaging my services at her expected accouchement than for any other object in connexion with the case. She, of course, had no doubt whatever of her pregnancy, but her age—which was fifty-two—led me to suspect that she was in error. I therefore arranged for an examination at her house, not acquainting her, however, with my doubts. The lady was at the time happily married, and her youngest child was a girl sixteen years of age. She presented the usual appearance of a woman far advanced in pregnancy, had not menstruated during the last six months, and, indeed, had menstruated at only irregular periods during the preceding six years. The examination proved conclusively that she was not pregnant at all, and upon my imparting to her this information, she received it with blank incredulity. "Why, Doctor," she replied, "I *know* I am that way, for I have during the whole of the last two months felt plainly the motions of the child." It was of no use to argue the question, for—if I may be permitted to parody a well-worn distich from Hudibras—

Woman convinced against her will
Is of the same opinion still.

I told her that time would prove the correctness of my assertion, but she preferred to trust her own perverted sensations, and accordingly prepared clothing for the expected little stranger. She kept that clothing many months in blissful expectation of her repetition, but it came not; and ever since then the bare mention by me to her of that extra suit of baby's attire is sufficient to ensure my expulsion from that house.

CASE III.—Six months ago a lady, who for twelve years had been an irreproachable widow, came to my office in great trepidation. I had known her many years, and knew also that no whisper of calumny had ever been uttered against her high character. Yet she assured me that she was pregnant! The lady gave her age at fifty-one, which was certainly not above the estimate I had formed. Having been engaged in literary pursuits during the greater part of her life, it is therefore scarcely necessary to mention that she was unusually intelligent. Fifteen years ago her last child was born. She believed herself *enceinte*, principally because she thought she could distinctly feel the movements of the child, and because her abdomen was progressively increasing in size. She spoke vaguely of having some months before had a weird dream, the particulars of which she could not definitely recollect, but she had dreamed of having sexual intercourse with a man, who, in her sleep, she believed to be her husband. Upon awaking, her daughter, with whom she had slept at nights for years, was lying by her side. The window had been left open when she retired, and when she awoke it was still open, the moonlight streaming through it into the chamber, and withal there were no signs whatever of an intruder having entered. The thought occurred upon her waking, that perhaps all this had not been a dream, and that idea had haunted her ever since—indeed it had now almost driven her to suicide. She hesitated not to say that she would destroy herself if she was not speedily relieved of her mental anxiety, and from my knowledge of the woman I believed her. She had not menstruated for five months, and her menstrual epochs had been quite irregular since her forty-fifth year. The idea of existing pregnancy had taken such deep hold on her disordered mental faculties that no amount of ridicule could efface it. I made a very careful investigation, and, as I had before supposed, found no evidence of any body within the uterus. Indeed, it was already pretty well atrophied. Unusual tympanitis existed over the course of the large intestine, and the passage of flatus along its channel plainly gave rise to the movements which, to her disordered imagination, seemed "proof as strong as Holy Writ" of fetal motions. All this I explained to her, and knowing her unusual intelligence, I was the more surprised that she should still remain incredulous. I prescribed remedies suitable for her condition, and after I had positively reassured her she left my office.

A fortnight later I was unexpectedly made the recipient of another call from my patient who had not yet got rid of her delusion. Again, to satisfy her anxiety, I made a careful exploration, and to some extent calmed her feelings by repeated assurances that she was mistaken in her fears. Recognizing the necessity for medication, I conjoined therapeutical remedies with assurances tending to inspire confidence in my prognosis, and finally I succeeded in eradicating from her mind the incubus which had almost driven her to self-destruction.

Upon reflection I am not satisfied that in this case there was any clandestine indulgence in illicit intercourse to inspire the false belief. Ordinarily, I place little or no credence in statements similar to those made to me in this instance, for "human nature is weak," and physicians early learn how very frequently prevarication is resorted to in these matters. But here my convictions favor the virtue of my patient, a lady respected for her fervent piety, as well as for intelligence and good character. And when I come to analyze more closely her mental condition I find that she had suffered from hallucinations as well as the delusion already specified. Three years ago she had lived for a few months in a house which she was compelled to abandon on account of hobgoblins and apparitions of divers kinds, which she could both see and hear, and which annoyed her greatly during her residence in that abode. Strange to say, her two children, the eldest of whom was twenty eight years of age and quite intelligent, also believed they saw and heard the spectres. However, as my patient left off housekeeping, began boarding, and therefore was not so frequently alone, the natural was substituted for the supernatural, and I have since heard nothing more from her about apparitions.

Since I have employed the terms *delusion* and *hallucination*, and as these expressions will be used again in the discussion of this subject, it seems proper that before proceeding farther I should define them clearly. Upon this point the definitions given by standard writers on insanity will certainly be accepted.

"A *delusion* is a false belief in some facts which, generally speaking, personally concerns the patient, of the falsity of which he cannot be persuaded, either by his own knowledge and experience, by the evidence of his senses, or by the demonstrations and declarations of others. A man thinks his head is made of brass, that he has a fire in his inside, that he is a beggar or a prince, and no amount of proof convinces him of the contrary."[1]

"*Hallucinations* are false perceptions of the senses, the eye, the ear, the nose, and so on."[1]

Here then is the key to the phenomena of pseudocyesis, and, in reference to this delusion concerning pregnancy, I state the general proposition that, *when we come to inquire carefully into the mental condition we will ordinarily find also other evidence of deviation from the normal standard.* This is well illustrated in the third case here reported, in which not only existed the delusion concerning pregnancy, but there were "false perceptions" of the eye and ear constituting true hallucinations, the patient believing for a period of several months that her house was haunted with apparitions which she both saw and heard. In the other two cases my attention was not particularly called to this point, and it is to be regretted that I did not in those instances make a proper analysis of the intellectual operations.

The aberration from the healthy standard is not often so great as to constitute actual insanity, although it cannot be said in any case that the woman is of sound mind. Occasionally cases of this character are met in which the changes occurring in the mental condition are so great as to amount to positive insanity. And in the last case of the series I have reported the woman would have undoubtedly committed self-murder had she not under medical counsel been divested of her delusions. Upon this point Barnes says: "In many cases where the nervous centres are involved in the climacteric confusion, the sensations arising in the belly are misinterpreted and are the immediate occasion of mental phenomena verging upon, and not seldom passing into, insane delusions."[1]

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[1] Blandford on Insanity, p. 153.

The delusion in all these cases of spurious pregnancy is a false interpretation of bodily sensations occurring for the most part in the abdominal viscera. (*a*.) Air moving about in the bowels, whether giving rise to tympanitis or not, is the most frequent source of the sensation which the disordered brain falsely recognizes as movements of the child. Or (*b*) simply the twitchings of the abdominal muscles may be mistaken for the sensation of quickening, the disordered mental faculties being unable to appreciate the difference. (*c*.) Simple distention of the abdomen, whether from intestinal gases or graver causes, may also give rise to a false belief in the existence of utero-gestation. These appear to me to be the sensations which are most frequently mistaken for those of pregnancy, and it is perhaps unnecessary to enumerate other conditions or bodily sensations of minor consideration which by a disordered mind may be interpreted as certain signs of existing gestation. In all of them the delusion refers to herself, and originates by stimulations from without the cerebrum. These feelings experienced by the organism generally, are the source and material from which the false ideas are developed.

Attempts have been made to distinguish these emotional and intellectual aberrations from genuine insanity. True it is that in the great majority of cases this is easily enough done. There *are* cases where it is certain that the woman is in reality *not* sane, and others in which it is impossible to determine satisfactorily whether she is *compos mentis*—so narrow indeed is sometimes the boundary between sanity and insanity. Conolly, as quoted by Barnes, lays special stress upon the statement that in women suffering from the affection described, there is still left "the power of comparison and judgment," which *he* says is not retained by the insane. This test it seems to me is not sufficient to form a line of demarcation, for some women possess the test upon all matters except the one under consideration, and it is well-known that certain individuals—males as well as females—undeniably insane, retain still the faculty of comparing and judging correctly concerning all subjects except the particular ones upon which they have delusions.

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[1] Diseases of Women, p. 235.

Although not germane to the foregoing subject, which I shall again take up before concluding this paper, I yet desire to make reference here to the old English law which directed in a certain event that to determine the question of quickening, a jury of matrons should be summoned. Under the laws of English criminal jurisprudence, as under our own, a woman convicted of a capital crime is allowed to plead pregnancy in delay of execution. And by the English statute the judge is directed to have summoned a jury of twelve women, to ascertain whether the prisoner is quick with child. This law is derived from the jurisprudence of ancient Rome, and has been established in England from the earliest periods.[1] These twelve are to be selected from women who happen to be at the time in court, and if there be not that number present, then the panel is to be completed by selecting other discreet matrons. When we reflect upon the ignorance of women in general upon such matters, the absurdity of such law becomes at once glaringly apparent. How are women, who are so frequently deceived concerning their own condition in this respect, to judge correctly of the existence or non-existence of pregnancy in others? Doubtless under the operation of that statute mistakes have been made sacrificing infant life in a large and unknown number of instances. We are necessarily forced to this conclusion when we come to examine the multiplied cases in which the law has been applied. In no infinitesimal proportion of these cases, where the matron-jury have pronounced the capitally convicted woman *not* pregnant, some trivial or accidental circumstance has happened to expose their mistake, and by its consequent correction saved the life of the child. Criminal jurisprudence is interspersed with the history of numerous such hair-breadth escapes, and no one conversant with the subject will for a moment believe it possible that all such errors have been detected. As scientific and medical knowledge grew apace, English courts became so well satisfied of this grave defect in their jurisprudence, that in cases where a doubt was raised, the verdict of the jury of matrons was submitted for revision to skilled medical counsel, who examined the case, either *with* the matrons or *separately*, if so directed. But it was as late as the second quarter of the present century before even this advance was initiated of calling in medical counsel to *assist* in clearing up cases where doubt of previous quickening had existed. In the *London Medical Gazette*, Vol. xii., is recorded the first instance where medical evidence was formally required in a case of this kind. This occurred in the year 1833, and by resort to skilled counsel the mistake of the jury was corrected and the child's life saved.

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[1] *Vide* Bishop on Criminal Procedure. Vol. i., page 867.

A verdict of the matron-jury that the woman was pregnant, was not sufficient. "She must be found to be quick with child,"[1] in order to entitle her to a postponement of the execution. At the *present* day, "whether under the English law a woman would be hanged who could be proved to be *privement enceinte*, beyond all doubt, is not certain; but in *this* country, it is presumed, if it could be made to appear indubitably that the woman was pregnant, though not quick with child, the execution would be respited until after delivery."[1]

By the laws of France, "if a woman condemned to death declares herself to be pregnant, and it is verified that she is pregnant, she shall not suffer her punishment till after her delivery."[2] Since the French code does not provide that quickening must have taken place to allow the woman to plead pregnancy successfully in bar of execution, but extends its protection to the infant at *any* period of utero-gestation, it is therefore much more in accord with physiological science than that of the English; and that it is more humane must be at once apparent. The French, true to their accustomed gallantry, are here superior to the more conservative English.

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[1] Bouvier's Law Dictionary, 2d ed., Vol. ii., p. 368.

[2] Code Pénal, Art. 27.

But as our common law is derived from the English, it follows that the obnoxious statute in relation to summoning a jury of matrons to determine the question of pregnancy may take place here, too, except in such States as have passed special legislative enactments upon the subject. And, indeed, we must not boast too much of the enlightenment and intelligence pervading the people of our Republic, for this very statute, which is a disgrace to the dark ages even, has been enforced in our own country.[1] True, it has not recently nor frequently been executed, but that it has ever been carried into effect at all in this country is a blot upon American civilization. Fortunately, many of our States have legislated upon this subject, thus wisely making special legislation take the place of the common law. In the State of New York it is provided, that "if a female convict, sentenced to the punishment of death, be pregnant, the sheriff shall summon a jury of *six physicians*, and shall give notice to the district attorney, who shall have power to subpena witnesses. If, on such inquisition, it shall appear that the female is quick with child, the sheriff shall suspend the execution, and transmit the inquisition to the governor."[2] It is to be regretted that in the latter sentence of the above quoted act the word "pregnant" was not substituted for the phrase "quick with child;" but, as has before been stated, it is presumed that in this country, if it could be made to appear that the woman was *privement enceinte*, the execution would be respited until after delivery. Upon this point the criminal jurisprudence of Ohio is more explicit, and in agreement with the teachings of medical science. It provides, in effect, that if a female convict sentenced to the punishment of death appear to be pregnant, the sheriff shall summon a jury of six persons, who shall determine the question of pregnancy, and, if they return a finding that the woman is *enceinte*, she shall be respited, regardless of the stage of pregnancy[1] Although the act specifies only that the commission shall consist "of six persons," yet the practice is of course always to summon six physicians.

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[1] The following case was tried in 1795, and is found in Vol. i., p. 489, of South Carolina Reports—State *v.* Arden: The prisoner, after having been convicted of murder, was asked if she had anything to offer why sentence of death should not be pronounced against her? upon which she pleaded pregnancy. Thereupon she was remanded to jail, and the sheriff was directed to summon a jury of matrons, *de ventre inspiciendo*. The court adjourned from day to day until the inquisition was found, which was returned by the sheriff into court, under the hands and seals of twelve matrons, in which they certified that they had examined the prisoner, and found that she was not pregnant. The prisoner then received sentence of death, and was afterwards executed pursuant to the sentence.

[2] 2 Rev. Stat., 658, quod vide.

It is needless to inquire what legislation exists in other States upon this subject, which is one of great interest and paramount importance to the medical profession.[2] Indeed, in a large proportion of the States of our Union there is no legislation whatever upon this matter, and in such States there of course prevails the common law of England. Enough has been stated to show, that for ages infant-life has been sacrificed through barbarous laws, founded upon the fatal error that life does not exist in the fetus, until it shall have obtained sufficient intra-uterine age and strength to make itself felt in "quickening." Enough, too, has been shown to impress upon him who practices the obstetric department of medicine, that he should not withhold necessary information from legislators, and that he be not unmindful of his duty of protection to the unborn. All enlightened legislation more recently effected upon this subject has been inspired by medical science, but the members of the medical profession should be unwearied in their efforts to influence the expunction of the obnoxious statutes under consideration. True, they have more recently been ignored almost entirely—particularly in certain of our own States which have no special legislation concerning the matter, but they still stand upon English statute-books, a disgrace to our civilization, and a relic of the barbarism and ignorance of the age in which they were begotten.

Returning again to the topic first under consideration, it may be remarked that there is scarcely a limit to the age at which the phenomena attending false pregnancy may occur. Women, at three score and ten, have fancied that they were about to experience anew the ecstasy of motherhood, and no force of argument could convince them of their delusion. Cases, too, have been recorded by trustworthy observers of females who, falsely imagining themselves *enceinte*, had actually gone through all the throes of labor, extending in some instances over a period of many hours. Spurious labor forms a very rare termination of spurious pregnancy. Of the cases I have seen reported, none is more typical than one which was reported by Dr. Underhill, of the Obstetrical Society of Edinburgh :[1] Labor pains continued throughout a whole night and until the afternoon of the succeeding day. When finally assured that beyond doubt she was not *enceinte*, they suddenly ceased and she complained of nothing subsequently, save muscular soreness about the lumbar region. All there was to show for her long imitative labor was a few ounces of menstrual fluid. The case is unique in some particulars, which are well worthy of discussion, but their consideration here would extend too much the limits of this paper.

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[1] O. Crim. Code, Secs. 190, 191.

[2] It has been decided that "where a female is convicted of a penitentiary offence, her pregnancy is no cause for a new trial." *Vide* Holeman *v.* State of Arkansas, Vol. xiii., p. 105.

Although, as has before been stated, there is hardly a limit to the age at which the phenomena of pseudocyesis may be developed, yet, as had been stated by Montgomery (quoted by Simpson), by J. Matthews Duncan, Carmichael, and by nearly all who have studied the subject, the affection is much more likely to occur at the climacteric than at any other period. It may, indeed, occur in the virgin, and in the false labor in which the disorder sometimes terminates, the pains so well simulate those of genuine parturition—even in the woman who never witnessed a labor—that the ordinary observer cannot detect the difference. Spurious pregnancy and parturition are not limited to the human family, but certain domesticated animals, as the bitch[2] and ewe,[3] it is asserted, have exhibited all the phenomena of the malady.

In a small proportion of cases of false pregnancy there is local disease of the uterus or the ovaries, or some irritation of the internal organs of generation, giving rise to sensations which are falsely interpreted by a disordered mind. So, too, is it found that some of the most intractable forms of hysteria are induced and perpetuated by reflex action from uterine or ovarian affections. But it is rare that pseudocyesis originates in such local causes, and when local disease exists it is more generally to be regarded as a coincidence than cause. Upon this point Simpson says that it "depends rather on some disturbance of the ordinary functions of the generative organs than on any organic disease of these organs attended and attested by organic changes in their intimate anatomical structure."[1]

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[1] *Vide* Obst. Jour. Great Britain and Ireland, Vol. ii., page 42.

[2] Simpson.

[3] Harvey.

When spurious pregnancy of the kind here considered occurs in the unmarried female, it gives good cause for suspicion that she has secretly incurred the risk of pregnancy. Most frequently will it be found, if the truth be learned, that she has clandestinely indulged in sexual intercourse. Not all, however, should be suspected, for exceptionally it occurs in the undoubted virgin, more especially if she be of an hysterical organization.

With our improved means of diagnosis it certainly cannot be difficult for the intelligent accoucheur of the present day to determine whether a pregnancy is true or false. With the aid of an anesthetic, the sound, and manual examinations, a positive and correct solution of the question may be reached. Formerly it was quite possible for the enlargement to be mistaken for ovarian dropsy, and "dry tapping," it is known, has been performed in this condition, much to the disgust of the operator. Such error, with our present knowledge and appliances, could now hardly be committed. Under profound anesthesia the inflation vanishes as if by magic, so that in women of not unusual corpulence the hand can, by firm pressure, feel the back bone. But to accomplish these purposes the patient must be brought completely under the anesthetic, else the tumor will not disappear. With some it has been a question as to what causes the swelling in phantom tumor. It has been stated by an authority which is frequently quoted in this paper that no gas escapes upon the administration of chloroform. Simpson, who has written more upon pseudocyesis than any other authority consulted by me, says that he has carefully tested the matter and finds that as the inflation subsides no flatus whatever escapes per anum. Hence, he argues that it "depends on a peculiar affection of the diaphragm which, being thrown into a state of contraction, pushes the bowels downward." Others, however, have observed results diametrically opposite to those obtained by the late distinguished clinician just quoted; and my friend, Prof. Reamy, of this city, assures me that in one case of this character in which he exhibited the anesthetic there was discharged an enormous quantity of gas accompanied by feces. It appears to be now generally admitted that the abdominal enlargement is due chiefly to flatus.

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[1] Diseases of Women, page 383.

It will be found that in most of these persons who fancy themselves pregnant there is marked derangement of the circulatory, digestive, and nervous systems—either one or all being usually implicated. Especially is this true of the alimentary functions, and flatulence is almost always observable. When pseudocyesis occurs at the climacteric it is probably, as a rule, more difficult of successful treatment than when occurring at any other period. Greater changes of a lasting nature are then taking place in the generative system than at any other time of life, except possibly at the establishment of puberty. The uterus ceases most frequently to perform its functions sooner than the ovaries. The ova are capable of being fecundated at a period of life somewhat later than the inner surface of the womb is fit to support embryonic vitality. In other words, fecundation is ordinarily possible a little later in life than conception. The more prominent changes taking place in the generative apparatus at the menopause consist in atrophy of the uterus, the Graafian vesicles and the ovaries. Indeed, after the cessation of menstruation they have no further office to perform in the animal economy, and may so far be regarded as foreign bodies. All these effects, as well as the wasting of the breasts, and psychical changes that are not infrequently observed, are directly the opposite of those which were co-existent with the first appearance of the menses. Women are differently affected by the reflection that they have arrived at that period when fertility ceases. Most of them are glad when they cease to bear children; some are indifferent, but there are a few who deeply regret having reached the time when child-bearing ceases. They still cling to the hope that they have sexual capacity, still cherish a desire for pregnancy, and so fondly do they sometimes cling to such hope and desire that they not only falsely believe themselves pregnant, but even impose upon the medical attendant.

It is not surprising that a study of the physical changes taking place in the system about the "critical period" should give rise to the opinion that this period is fraught with unusual danger. Such opinion is further strengthened by alterations which frequently occur in the mental and moral nature about this time. But the danger attending the climacteric has certainly been greatly over-estimated. Indeed, Cazeaux, in his work on Obstetrics, states that statistics prove the mortality of women to be no greater between the ages of forty and fifty than at any other period of life.[1] While I do not accept as true this sweeping statement, I am nevertheless convinced from careful observation that, although the dangers of the "change of life" are greatly exaggerated, yet the mortality is somewhat higher at this than at any other period of adult existence.

Some writers affect to show that there is in the male a period corresponding to the climacteric in the female. But the mind which can detect phenomena in man constituting the analogue of those attendant upon the menopause in woman, is scarcely less visionary in its operations than is the disturbed intellect of the patient afflicted with pseudocyesis. The fact that men have imagined themselves *enceinte* is no proof that to the male sex belongs a period analogous to the climacteric in the female. It only proves that he is the subject of a particular delusion. It is exceedingly rare that this delusion is met with in man. More frequently he fancies himself a beggar, prince, or perhaps Christ. If he experiences pain in his head he straightway imagines it is of brass; if he feels discomfort in his chest he says he has fire within his breast; and if he distinguishes abnormal sensations in his abdomen he may conceive the notion that he is pregnant. Any of these or similar delusions is proof that the person so affected has passed from the domain of reason and is insane. Though insanity may exist without delusion, yet well-defined delusions never exist without insanity. If the delusion is not well rooted, nor strongly fixed, as is true of many cases of pseudocyesis, then the individual cannot be said to be insane, strictly speaking, though she is legally of unsound mind. The latter term expresses a degree of mental aberration inferior to the former, though it is impossible generally to say just where unsoundness of mind leaves off and true insanity begins. My views upon spurious pregnancy differ in general from those usually accepted perhaps more in relation to the erratic mental phenomena present than in any other respect. To these I certainly attach much more importance than is usually allowed.

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[1] Vide Cazeaux's Midwifery, page 108, 3d American Edition.

In the majority of cases of pseudocyesis the false notion of pregnancy is based upon movements which the disordered mind recognizes as quickening. We all know now that the sensation of quickening[1] "does not represent the first movements of the child, for they are seldom perceived by the mother earlier than the sixteenth week, whereas, in abortions at a much earlier period, vigorous movements are often observed after the expulsion of the embryo.[2]" It is also now known that the sensation cannot be transmitted by the sensory filaments of the cerebro-spinal system supplying the uterus, because they are too few in number and are limited to the neck and os. Hence the movements of the fetus cannot be felt until the womb comes in contact with the walls of the abdomen, supplied with sensory fibres which readily transmit sensations of all movements of the child sufficiently vigorous to be communicated through the uterus to the abdominal parietes.

Originally it was believed that quickening arose from the first motions of the child in utero, a view which, though not strictly correct, was certainly much nearer the truth than that adopted by the physiologist early in the present century. The doctrine promulgated just previous to the demonstration of our present rational views was, that the sensation of quickening had no relation whatever to either the life or the motions of the child, but that it was due *exclusively* to the sudden change in the position of the pregnant uterus. And then it went on to explain how the feeling of quickening differed from the sensation caused by the movements of the child—the former resembling more the feelings of fear or terror, followed sometimes by syncope—which latter condition was explained by the sudden removal from the iliac vessels of the pressure of the gravid uterus, producing thereby a temporary fulness of the blood-vessels of the lower extremities, anemia of the brain, and a general loss of balance in the circulatory system.[1] It is difficult to understand how the medical mind, even in the early dawn of medicine as a science, could have entertained the conceit that quickening marked the period at which the fetus receives the essence of vitality. Yet upon this preposterous belief, the error of which was exploded ages ago, has been founded the common law, which still recognizes it as true, since it prescribes that quickening shall measure the degree of criminality in cases of *abortus procuratus*, and that, as has already been shown, it shall determine whether the plea of pregnancy, in delay of execution, shall be allowed or rejected. Difficult as it may be to understand how such erroneous doctrine could ever have been fostered by the medical profession, it is yet equally difficult to realize that the phenomena of quickening have been but so recently explained fully and with scientific exactness.

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[1] QUICK, a term of Saxon origin, denoting *living*.

[2] Leishman's System of Midwifery, page 165.

There is yet another class of cases besides those which have been in the preceding pages discussed, to which only sufficient reference need be made to explain that they do not properly belong under the head of pseudocyesis. I refer to those singular instances of pretended pregnancy and feigned delivery, which have sometimes duped even distinguished members of our profession. Various motives may induce a wife to simulate pregnancy, and even to feign delivery, among which may be named the desire to appease the wrath of a husband who reproaches her for barrenness; also the wish to fix the affection of her husband, or some one else whom she may desire to have love either herself or child. Or, in case of illicit intercourse, more especially if the woman be seduced, the deception may be practiced for the purpose of bringing to terms the recalcitrant lover, and thereby hastening marriage. Other objects, which would be suggested upon a more careful consideration of the topic, may incite a female to pretend pregnancy; and indeed such cases are more frequent than would at first thought be believed. More properly, however, they belong to the annals of deception, and have little claim to be considered in the present paper.

[1] Vide Paris and Fonblanque's Med. Jurisprudence, Vol. i., pp. 239-240.

Finally, as to the treatment of pseudocyesis, little need be said. Frequently the most positive assurances of the medical adviser, based upon proper examination, are all that is needed. Conjoined with moral treatment, however, medication is sometimes advantageous, and especially is this true of hysterical cases, which are often benefited by assafetida, valerian, and more particularly by the bromide of potassium. The latter remedy is of course contraindicated in anemic cases, but even in them it may sometimes be advantageously employed in conjunction with tonics.

Occasional laxatives, if constipation exists, antispasmodics for flatulence, and remedies addressed to the defective condition of the brain, are the chief measures indicated. There is, as I have intimated pretty clearly in the body of this article, in all these cases a lack of nervous energy which, above all, should as far as possible be restored by all the means at our command.

IMPOTENCY IN WOMEN.

BY
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In view of the just and proper restrictions thrown round the sexual act, this is a subject of exquisite delicacy. I am tempted to adopt it as a monographic text because it is of sufficient importance as a source of unhappiness and disease to merit the attention of the gynecologist; and also, that within the compass of the term lie symptoms ungrouped and facts yet unexplored.

With impotency in man we are dealing with a positive quality, and one that underlies his competency as a sexual being. This condition in woman furnishes us with a negative quality, one that does not interfere with the sexual relation, except such fulfilment and completion of it as constitute healthful conditions of the act in the woman herself.

Impotency in the female does not imply sterility, nor is unfertility an absolute result in man. It may be the general and probable result, but in the conditions that constitute this disability it does not exist as an invariable consequence. One instance of this occurred within my own experience and in the practice of the late Dr. John P. Whitbeck, of West Troy. A young man, the victim of an accident, had impotency, that, judging from the subjective symptoms of sensation and the objective ones of motion, was the result of serious nervous disease. He married, and his wife presented herself in a few months for an explanation of her condition. It was diagnosed as pregnancy at the fifth month. Yet here we had the corroborative testimony of the wife and the positive evidence of the existence of virginal traits, that complete sexual intercourse had never taken place. This approves the observations made long since by Sims, that pregnancy may be the result of a deposit of the fertilizing element of the male within reach of the sexual canal of the female, and without reference to the means. Great light is thrown upon the significance of impotency as generally understood, and as existing uncomplicated by functional or organic disease of the seminal glands, by the frequency of pregnancy as a result of vulval intercourse.[1]

This is offered as a partial explanation of the seeming paradox that impotency is not an absolute bar to fertility in either sex. But while in man we must give it its long established *status*, both as a legal obstacle to marriage and as a probable cause of the defeat of the sexual act, in women we must assign it other significance and value. The single fact that woman's sexual attitude is a passive and not an active one, renders the difference in result, as between the sexes, clear.

It may be asked in what terms should we define impotency in women as distinct from sterility or infertility? I would answer broadly, that the same terms apply nearly to both sexes;

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[1] The following is a curious illustration of this fact: Dr. Galabin reported to the Obstetrical Society of London, Nov., 1876, a case of Cesarean section for cicatricial obliteration of the vagina, in which the orifice of the vagina only admitted a No. 6 catheter. After a labor of six days a dead child was removed by the section.—Obstet. Jour. Great Brit. and Ire., Vol. IV., p. 607. Also case of Dr. Packard, Amer. Jour. Obstet., Vol. II., p. 348.

Two interesting cases were also reported by Dr. Leopold, to the Obstetrical Society of Leipzig, entitled, "Two Cases of Existing Complete Impotentia Coeundi," Archiv für Gynäkologie, Bd. XI., p. 400.

and in woman as in man it consists in an inability to complete, in the usual manner of nature, the copulative act; that in impotent women this act is simply mechanical, without the subjective and characteristic nervous sensations that constitute the acme of the sexual emotion. Hence, the woman in this condition is passionless; the act itself being without pleasurable consummation, she comes to regard it with indifference, and finally, with aversion.

The holier and more lasting part of the union between the sexes is spiritual, but united inextricably with a bodily one; here then we have the substance to this spiritual essence, the perfection and preservation of which conserve moral purity, social welfare, as well as bodily health and happiness.

.Like its analogous condition in the other sex, it has the significance of a symptom and not that of a morbid entity. It is the outcome of errors of either structure or function of the parts involved in the reproductive apparatus, or it may be the result of subjective mental conditions.

I believe it occurs far more frequently among women than men. Indeed, this may be made a general observation concerning the relative frequency of diseases of the sexual parts and functions in the sexes; and further, that diseases of this nature, extremely rare as they are among men, are postponed to the decline of life, while among women they are mostly confined to the meridian of life. This has also a close relation to the causes of this excessive liability of women to sexual diseases. The activity of the generative organs in women are nearly ceaseless, while in man, unless actually engaged in the performance of function, they are undergoing the recuperation of rest. Further, these organs and their function in women afford a more complete measure of her organic life, and define more nearly the limits of her activities than in man, in whom these parts and functions are subordinate to other phases of activity. A brief reference to the moral atmosphere that is liable to envelop these cases will serve to confirm my opinion of their importance and to preserve the apologetic tone of this introductory.

It may exist as a twofold cause of unhappiness and ill-health. Firstly, in dealing with man so far as he bears relation to my subject, we are regarding him in his coarser relations—not in any sense as an intellectual being, but as he exists among animals as one supremely selfish. He not only demands pleasure and satisfaction for himself, but he requires something much more difficult to give—the appearance, if not the real existence, of satisfaction and pleasure in the object of his attentions. Unhappiness and suspicion are often the result of the absence of this pleasure, and are sure to work the material disadvantage of the weaker party. To show that this is really the case, I need but to remind physicians how often they are approached by husbands upon this subject; and yet further, how often the coldness and indifference of wives are alleged as the excuse for conjugal infidelity.

In the absence of any definite knowledge concerning the physiology of the subjective sensations involved in this act, all speculation would be out of place in a practical view of the subject. Our knowledge of the matter may be summed up in the words: that we know they are concomitants of moral and physical health, and that their absence points to either a radical and innate psychical or physical defect, or to coexisting disease.

This brings us to a consideration of the causes. We may divide them into three groups:

I.—MENTAL, subdivided into:
    a. Congenital psychical defects.
    b. Temporary mental conditions.
    c. Sexual incompatibility.

II.—GENERAL PHYSICAL CAUSES.
    a. Debility resulting from constitutional and other diseases not sexual.
    b. General defective development.
    c. Lactation.

III.—CONDITIONS OF THE SEXUAL ORGANS AND NEAR PARTS.
    a. Defective development and result of injury.
    b. Dysparennia (Barnes) resulting from (1) uterine displacement; (2) hyperemia of the uterine body; (3) ovarian inflammation or congestion; (4) colpitis, either simple or specific; (5) spasmodic contraction of the vagina (vaginismus, Sims); (6) vascular tubercles of meatus urinarius; (7) diseases of

the rectum, as fistula, fissure, or inflamed piles or ulcers.

c. Deranged nervous system from uterine displacements and other chronic uterine diseases, and debility from exhausting discharges and chronic uterine disease.

d. Morbid growths.

e. Delayed or arrested menstruation.

I.—*a.* There are phases of impotency beyond the power of medicine to remove, and, as having their causes within that debatable ground existing between mental physiology and psychological speculation, beyond the power of science to know. It is useless to theorize about these cases; we simply know that they do exist. In married life they are rare, but it is impossible to know how many among the vast number of female celibates owe their condition to the repulsion of the other sex, that would naturally result from an entire absence or great repression of the sexual tendency. The few cases that have come to my knowledge were not associated with any common state of physical condition or temperament. These cases show marked traces of heredity, and are, I believe, the accompaniment of those instances of sterility that are known to prevail in families. This condition has been anciently recorded. Solomon, than whom no man was more competent to offer an opinion, in one of his Proverbs (xxx. 16) compares the insatiable qualities of the barren uterus to the grave.

b. In the male sex impotency is often dependent upon transient mental conditions. Numerous cases are cited in medical jurisprudence, of men who are impotent as to one woman, but virile to another. An offensive person, dislike, extreme differences in age, and even less evident causes, may produce this result. The acute emotional nature of woman renders her far more liable than man to the operation of these causes. In addition to these, other causes exist in her case to which men are less exposed. Habitual intoxication, neglect, and known immorality, and the presence of secondary syphilis in the husband has, within my own knowledge, been the cause of such intense dislike that the sexual act was entirely devoid of subjective completion. These causes are outside of the office of the gynecologist, and are here brought forward for the purpose of demonstrating the great variety of causes which may tend to this condition.

With regard to the third cause under this head (*c*), *sexual incompatibility*, the careful physician can accomplish some good. Owing to the reticence that one instinctively feels when speaking of this subject, I shall not do more than allude to it. So far as my own observation extends, the husband is generally at fault. The more common cause is acute sexual irritability on the part of the husband. This is often the case with young husbands who have been guilty of masturbation in early life. So sensitive are the male organs in some cases to the sexual stimulus, that it amounts nearly to impotency. This is the result of either of one or the other of the following causes—debility or excess of sexual emotion. In the first, good results are often obtained by the use of phosphorus, nux vomica, iron, cantharides, cold sponge-baths, complete and prolonged abstinence from sexual attempts, and discontinuing stimulants or tobacco if indulged in; the last cause is often moderated or removed by the use of the bromides, digitalis, camphor, low diet, and if these fail, by a resort to some of the numerous articles that are known or supposed to have antiphrodisiac properties.

There is one other condition which belongs properly under this division of the subject—the unequal development of the sexual organs in the sexes. Nature usually provides a remedy in the power of the vagina to accommodate itself to almost any distending force. This condition I believe to be but seldom brought to the notice of the physician; but the other often forms the subject of complaint, and deserves delicate and considerate attention.

II.—*General physical causes* operate directly to produce the result we are studying, and chief among them is (*a*) debility of the system at large. It may be said usually to accompany the amenorrhea that is the result of tuberculosis of the lungs; and in those cases of this disease in which the menstrual function is preserved to the last, it is developed when the resulting general physical depression reaches a certain point. The dyscrasia of scrofula, cancer, or syphilis, has the same result. Diseases of a less profound character, if prolonged to the extent of causing depression to this limit, are also potent. I have a case now under my care of a well-developed young married woman, who for several years has suffered from a mild form of chronic diarrhea. She says that for a long time she has not experienced the sexual orgasm, and as a consequence her relations with her husband have been nearly suspended. In this case, although quite a degree of debility was produced, there was but slight loss of flesh. While for several months past the diarrhea has been to a great extent under control, and she has been gaining in strength, yet the sexual disability has not been removed. Let this case suffice to illustrate the great variety of causes that, operating through a depressed physical tone, may produce this result. The indications for treatment are self-evident.

Those extremely rare cases (*b*) in which there is an arrest of development generally, the form preserving the characteristics of childhood, simply require mention. In lactation (*c*), however, we have a more important subject to consider. I believe it to be often the physiological cause of female impotency. That it is not generally the case, however, is clear. Neither is it generally the case that menstruation is suspended during the entire continuance of this function. Lactation may be regarded as a vicarious outlet for sexual energies, and therefore upon theoretical grounds such a result may be looked for more particularly during that part of lactation in which the uterine function is in abeyance. In abnormal or excessive lactation, and which is not rarely found associated with profuse menstruation, we have combined both the physiological result and that referred to above (*a*). So far as either of these conditions relates to our subject, it does not require treatment.

We enter a more practical field when we consider (III.) *those conditions of the sexual organs or adjacent parts* that may directly cause this phase of impotency.

In defective development the results of injury (*a*) there exist mechanical causes, some of them admitting of a surgical remedy. In atresia vaginæ, the patency of the passage may be restored; and in fistula, extensive rupture of the perineum, and the binding of cicatricial bands, the remedy lies in the same measure. In the forms of impotency that depend upon defective and deformed development, we are narrowed to a very small field in our efforts at correction. In imperforate and undue resistent hymen, and in such as I reported in the *New York Medical Journal* for March, 1876, of a congenital transverse vaginal septum, the treatment is evident and simple. In the case referred to, the sexual incompetency did not disappear for several months after the operation. So far as injuries are concerned, we may say that they are productive of impotency whenever they are of such an extent as to interfere with the value of the parts as a sexual apparatus. It would needlessly extend this paper to refer to them separately, or speak of the details of treatment.

Dyspareunia (*b*), or painful or difficult sexual intercourse, exceeds in a great measure all the conditions enumerated above as causes of impotency. As a general principle, it may be said that uterine disease can produce this result only through dyspareunia, or by means of debility or the serious nervous symptoms that are liable to group themselves round old forms of uterine disease. I believe that retroversions or flexions are nearly always attended with this result if of long standing.[1] The opposite form of dislocation is not usually so attended, for the reason that the hypersensitive uterine body is thrown forward out of the way of the male organ, while in the posterior dislocation the line of displacement lies directly across that of copulative effort. Prolapsus—unless of the third degree—free from any cause productive of tenderness of the uterine body or neck, cannot usually tend to impotency ; in fact, a slight degree of prolapsus is known to favor conception. The other causes, hyperemia of the uterus (2), ovarian inflammation or neuralgia (3), colpitis, either simple or specific (4), are direct causes of dyspareunia. Another condition, termed vaginismus (5), has of itself attracted great attention ; but the description of Sims and other authors is confined to the rare and extreme forms of the disease, ignoring its lighter and less painful phases, and as the latter are far more common, they are consequently of greater importance. If the term vaginismus is confined to the extreme forms of this disease, the condition I wish to designate may be termed painful spasm of the vagina.[1] It is not so severe as to exist as an obstacle to sexual intercourse, but adds the element of pain to what ought to be painless and pleasurable. I have heard women who have been years married, make the confession that they had never attempted intercourse without pain. I recall the case of Mrs. S., thirty-eight years old, eighteen years married and childless, who applied to me for treatment for this trouble. I was unable after a most careful search to reach an explanation, and after attempting treatment under various theories as to the cause, my patient left me without receiving any benefit. These cases are, however, generally associated with dryness and hyperemia of the vaginal walls, and an inspection of the ostium vaginæ shows the same condition existing at this point. Oftentimes the vagina does not resist the entrance of either the finger or the speculum by spasm, nor does the examination elicit pain, yet the sexual act is painful. This pain is usually referred to the entrance of the vaginal canal. The explanation that seems to meet the phenomenon is that the excitement attending the sexual act induces a spasm of the parts not produced by any other form of irritant. So far as my own experience goes, and I have seen quite a number of them, these cases are always impotent, and are so as a direct result of the dyspareunia. The only treatment I shall venture to suggest is the free use of the warm vaginal douche, the temperature of the water being about 105°, and the amount not under a gallon. This is to be followed by the injection of a drachm of glycerine by means of a small glass vaginal syringe. Vascular tubercles (6) of the urinary meatus are always painful, as are also minute points of erosion of the mucous membrane not rarely found at this point. Cases of the latter, from the absence of serious uterine symptoms, are liable to exist for a long time undiscovered; and are only found by actual inspection of the parts. The vascular growths at the meatus are generally brought to the notice of the physician, owing to the severe pain that is excited by urination, while the pain in sexual intercourse is rarely referred to unless in answer to a question. As the relief is prompt after proper treatment, the physician, without suspecting it, cures one disease by removing the other. I shall make one suggestion as to the treatment of these growths, namely, to use fuming nitric acid as a caustic instead of the generally popular silver nitrate. The latter is much more painful than the acid, and is too feeble to remove even the most minute tubercles, except several applications are made. Of course, if the tubercles are numerous and of large size, the use of the scissors is the better way.

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[1] Dr. Wright quotes Dr. Chambers to this effect : "When the anteversion has become considerable, 'that many wives lose suddenly the inclination for, and the power to bear their matrimonial privileges.' "—"Uterine Disorders : their Constitutional Influence and Treatment," by Henry G. Wright, London, 1868, p. 68.

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[1] Upon the anatomy of this subject the opinion of Hildebrandt is of interest. He says: "It appears unquestionable to me that this group of muscles can be no other than that of the levator ani, which embraces the middle lateral and the posterior portion of the vagina in the shape of a horse-shoe, and which during its most powerful tonic contraction seizes a cylindrical body enclosed in its grasp, like the erected penis, from behind and both sides, and presses it forward against the anterior pelvic wall." And in regard to the superior vaginal constrictor of Sims (constrictor cunni superior), the author's opinion is expressed emphatically that it "can be no other than the levator ani" ("On spasmodic contraction of the levator ani during coition."—Archiv für Gynäkologie, Vol. III., pp. 224, 230.)

Diseases of the rectum (7) come in for a large share in the production of dyspareunia, and are always serious and sometimes difficult to treat. Fistula and hemorrhoids are the less serious and better understood in their treatment, while some nearly incurable diseases occur in this part. I have met with cases of chronic ulcers of the rectum that have existed for years and defied the treatment of skilful surgeons. The tuberculous ulcers of the rectum are oftentimes incurable. Simple ulceration treated by means of nitric acid, or the nitric acid of mercury, is usually quite tractable. The common perineal retractor is the best instrument to employ in exposing the cavity of the rectum, compared to which all forms of rectal speculæ are very imperfect instruments. In regard to the inveterate and tuberculous ulcers, I have no special treatment to recommend, as in one case all the means I had ever read of, or had originated myself, failed.

Deranged nervous system from uterine displacements and chronic uterine disease, as well as the general debility that results from the same causes (*c*), act by destroying the degree of health necessary to the proper performance of the sexual effort. This act is a normal and functionally healthful one, and, not unlike all other normal physical acts, requires the presence of a certain degree of vigor and health for its proper performance. These conditions are sufficient to induce impotency in man, and are still more potent to produce the same result in the more delicately constructed system of woman. The group of nervous symptoms that attend various forms of uterine disease is but little understood. The nervous system is the field in which uterine diseases produce their most disastrous effects. The laws that govern the relations of the reproductive organs with the various system of nerves—more especially in their diseased relations—yet require to be studied. Impotency is, of necessity almost, a direct result of this nervous derangement when it is a constant attendant of uterine disease or profound in its sympathetic relations. There is, nevertheless, a large class of cases in which the vigor and nutrition of the body are mainly and disastrously affected by uterine disease while the nervous system preserves its normal tone. So far as my experience goes, these are cases of disease attended by exhausting discharges—either of albuminous leucorrhea or hemorrhage, rather than by displacements. In the end, impotency is accomplished through the same agency, that of lack of vital energy. In both of these conditions dyspareunia is not an element in the defect of the copulative act.

Morbid growths (*d*) are a mechanical cause, and act by the production of pain, or by interposing an obstacle to sexual intercourse. They are alluded to in order to render the analysis of the conditions leading to this result complete, and do not require further attention, the indications for treatment being evident.

In considering the effect of delayed or arrested menstruation (*e*) in the production of impotency, we enter a wide field of speculation. In our present knowledge of menstruation and its physiological relations to the purely sexual function, it will lead to but slight advantage to enter into details. It is probable, however, that when suppressed menstruation is an attendant upon a delayed puberty, impotency is necessarily a result for the time being. The same conclusion is reasonable when menstruation is arrested by reason of chlorosis or debility, or from a congenital or acquired feebleness of constitution. Perverted, irregular, or arrested ovarian action must strike at the very origin of sexual emotions as directly involved in the act itself, and as such, must be an efficient cause of impotency. The absence of the ovaries, not congenital, as a result of ovariotomy or destructive disease, needs not be more than alluded to, as there is evidence, in some cases at least, that their removal has had no effect upon the sexual sensations of the woman. It is worth while, however, to observe, that these cases may be those of women who never experienced the sexual orgasm, and therefore their subjective sensations would remain unchanged. There is every reason to believe that there exists a large class of women—as the reader may have inferred from this paper—who remain ignorant through life of these sensations. An arrested menstruation the result of accidental causes, and not symptomatic of a general and serious derangement of the health, would not imply impairment of sexual vigor. The functions of menstruation and ovulation, as distinct acts both as to time and cause, have, it is to be presumed, not a united action in causing impotency, except as they may result from a common cause. Normal arrest of menstruation, such as attends pregnancy and lactation, do not require mention other than they have received in a former part of this paper.

I have thus gone briefly over the more evident conditions that may lead to impotency in women, for the purpose of calling attention to a subject that I believe to be important, both as a conservator of morals and as a necessity to domestic happiness. I have purposely omitted details of treatment, as the causes mainly alluded to are generally well understood.

A few words in conclusion as to the motive of this paper. Woman in her sexual relations is generally written and spoken of as if she were naturally deficient in any physical sensations that are purely and in every sense the analogue of virility in the male. There is no word for this normal and necessary sexual tone, as applied to women, in gynecic literature. It seems proper in the absence of any such term to express the idea, with unavoidable circumlocution, by saying that it is the analogue of the subjective copulative sensations of man, and that the acme of the sexual orgasm in woman is the sensory equivalent of emission in man, observing the distinction necessarily implied between the sexes—that in woman it is psychic and subjective, and that in man it has also a physical element and is objective. The absence, therefore, of such sensations in woman I have termed impotency.

THE OBSTETRIC FORCEPS.

BY
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Ex-President and Honorary Fellow of the Medical Society of Virginia.

THE question of instrumental interference comes home to each one in the daily practice of the obstetric art; and as none can be indifferent to the responsibility nor fail to be touched by solicitude, the question is one of practical importance and great interest, and presses heavily upon the mind and feelings of those engaged. No one can fail from observation to be deeply impressed with the exquisite accommodation of means for the accomplishment of natural labor; for the triumphs achieved by the natural forces are often such as to awaken wonder and amazement—and an exalted estimate of the natural powers is the reasonable result of experience. Yet observation also teaches that *nature* is not always a safe and efficient agent; that circumstances may exist or emergencies may arise in the progress of parturition when a resort to instrumental aids may become necessary in order to save the mother and her offspring from harm or impending destruction, when delay, hesitation, or timidity may jeopardize the safety of our protégé. Happily the errors which most frequently occur in parturition may be met and overcome by a resort to means entirely harmless to both mother and child.

From the time of the invention of the forceps by the Chamberlens to the present hour, the hue and cry has been raised that it is an instrument of *power* and, therefore, a *dangerous* one. This sentiment has been inculcated by teachers and repeated by authors, old and new, until the forceps, by the strength of associated ideas, is regarded by many as little better than an instrument of torture to the flesh of both mother and child. In the face of this I assert that the forceps is an instrument not likely to do the least injury to either mother or child unless *rudely*, *improperly*, and *inconsiderately* used. And I hold that it is alike unfair and illogical to deprecate the employment of an instrument because of the blunders and mistakes committed by those ignorant of and unversed in its employment. I maintain that *its power* is the very factor which, under intelligent direction, measurably enhances its usefulness and value.

I am therefore disposed to accord Levret and Smellie the full meed of praise for their development of the power of the forceps, by the suggestion of a second or pelvic curve which adapts it as well to the axis of the superior as that of the inferior strait, thereby widening its range of employment and bringing many mothers and children within the scope of its assistance and life-saving influence. Experience has taught me that the long, double-curved forceps, constructed after the classic models of Levret and Smellie, is an instrument entirely conservative—one easy to introduce, direct, and manage; subserving by turns the office of prehensor, tractor, dilator, lever, and compressor, proportional to the traction; an instrument of more power and therefore of far more efficiency than the short forceps fashioned after the original invention of the Chamberlens. In order to enforce the opinion of the superiority of the long over the short forceps, I may be permitted to refer to an interesting historical incident which occurred to Hugh Chamberlen, a son of the inventor. In 1670, when on a visit to Paris for the purpose of selling the *family secret*, he undertook to deliver with the forceps a case which the illustrious Mauriceau had declared could be accomplished only by the Cesarean section. Chamberlen made an inglorious failure because the problem presented of extracting a head arrested at the brim of a contracted pelvis was one beyond the capacity of the short forceps. The capability of the long, double-curved forceps under similar circumstances is illustrated almost daily.

Dr. George Johnston, in a recent report of the Rotunda Lying-in Hospital, Dublin, adduces in evidence of the safety of the forceps, seven hundred and fifty-two cases so delivered without the slightest injury to the soft parts of the mother in a single instance.

And in striking illustration of the safety, as well as the power of the long forceps, Dr. Johnston recites the case of a woman with an exostosis of the right sacro-iliac junction, which prevented the head from engaging in the superior strait. Its delivery by the forceps consumed three-quarters of an hour. When born the child presented upon its parietal bone a depression 3 inches in length, 1¾ inches in width, and one-quarter inch in depth. The child weighed 7 pounds 12 ounces, and was discharged well and vigorous with its mother on the eighth day. It being conceded that the forceps is an entirely safe and harmless instrument when used with discretion and the dexterity readily attainable by all, I will advance a step further and proclaim the forceps to be a conservator of the health and life of both mother and child. By timely interference, especially in the second stage of labor, the mother may be saved from much suffering with her physico-vital forces greatly conserved, so that her convalescence will be more speedy and satisfactory. Her tissues will have been spared from prolonged pressure and the many evils which are not infrequent consequences of protracted labor, and the child saved from the serious, and it may have been fatal, results of undue and prolonged pressure.

The truth of this declaration has been conclusively shown by Sir James Y. Simpson, Drs. Tyler Smith, Johnson and Sinclair, and others; and as a preventive of much trouble the timely resort to the forceps is commended upon the time-honored maxim that "an ounce of prevention is worth a pound of cure."

Observation, amply corroborated by statistical records, proves incontestably that the opportune and frequent use of the forceps is a means of lessening both maternal and fetal mortality. The valuable and thoroughly reliable statistics of the Rotunda Maternity have been carefully analyzed by Mr. Philip H. Harper, and a table constructed, to which he has added the results of his own experience, which clearly and convincingly show the vital bearing which the early and frequent use of the forceps, in the second stage of labor, has upon maternal and fetal safety.

Physicians.	Forceps Cases.	Fetal Deaths.	Maternal Deaths.	Duration of Labor.
Collins	1 in 694	1 in 26	1 in 329	38 hours.
Hardie	1 in 355	1 in 20	1 in 324	35½ hours.
Johnston ...	1 in 60	1 in 35	1 in 502	29⅓ hours.
Harper	1 in 26	1 in 47	1 in 1490	16 hours.

This table speaks eloquently in favor of the early and judicious employment of the forceps. Dr. G. Hamilton, of Falkirk, Scotland, has, by his extensive and frequent resort to the forceps, been enabled to furnish a statistical exhibit brilliant in character, which can hardly fail to wring from the recusant opponent of the forceps an acquiescence of its life-saving capacity.

The results of his vast experience have been published in five series. In the first the ratio of mortality to the child was one in three hundred and seventeen, in which the forceps were used in about every eighth case. The second and third series aggregate eleven hundred and forty-seven children delivered alive, with only the loss of one child (a breech presentation) to interrupt the succession.

The fourth and fifth series aggregate 1,500 cases, *without a single still-birth*, the forceps having been used in about one case in five.

Dr. George Johnston has published his experience in a recent report of the Rotunda Maternity, Dublin, which exhibits a very low death-rate: 15 in 1,236, only 7 of which, or one-half per cent., resulting from puerperal causes. This he fairly ascribes to the practice of abbreviating labor by the forceps, and thus averts the evil consequences of protracted labor and the damaging effects of prolonged pressure upon the soft tissues of the mother. Dr. James Hardie, of Manchester, England, employed the forceps once on an average in between three or four cases in one hundred confinements, for the sole purpose of relieving anxiety and pain, in which all the mothers recovered except one, who died from *acute tuberculosis* on the twenty-fifth day. The children were all born alive. Dr. Edward S. Dunster, in an admirable paper on the forceps, read before the Michigan Medical Society, in May last, impulsively asks: "Where, in the whole range of obstetric literature, can we find, under the old and so-called conservative practice, a success equal to this? And if by shortening the duration of labor we can secure such brilliant results with a saving of an incalculable amount of suffering, are not those who oppose this practice bound to show cause why it should not be adopted?"[1]

What are some of the circumstances which may require a trial or application of the forceps?

A distinguished master of the obstetric art (Dr. Robert

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[1] To this paper I am indebted for a number of facts and figures, for which acknowledgment is due, and most cheerfully rendered.

Barnes) has defined labor a dynamic problem. Three factors enter into its solution:

1st. There is the fetus, the body to be expelled.

2d. There is the channel, made up of the soft and bony parts, through which the body must be propelled.

These together constitute the resisting force or obstacle to be overcome.

3d. The expelling power—the uterus and the auxiliary forces. This last factor presupposes a healthy condition of the vascular, respiratory, and nervous systems. All these must be harmoniously balanced in order to produce a healthy labor. The complications which occasionally arise may be as various as the combinations and permutations to which these factors are susceptible. I shall be content to indicate the most important:

1. Where the head descends *immediately* (without the intervention of the bag of water) upon the cervix uteri, or where a premature rupture of the membranes has occurred, with an escape of the liquor amnii, which brings the head directly in contact with the cervical tissues. In both instances the condition becomes practically the same as that in the second stage of labor, with all the possible evil consequences of protracted pressure. The forceps introduced through the partially dilated but dilatable os, forms, with the enclosed head, *a dilating wedge*, often efficient and satisfactory.

Dr. George Johnston, in a report for 1875, illustrates the practicability and safety of this method of applying the forceps, in 169 cases; in all, 159 mothers recovered. Of the 10 who died (some from non-puerperal causes) the autopsy failed to disclose the least injury done to the soft structures. Of the children, 134 were born alive, 13 died, 14 were born dead, and 8 were still-born. The practice, though not new, is at variance with the teachings of most of the recognized authorities; yet with such results the procedure is worthy of earnest consideration, and is beyond question a most striking and important advance in modern obstetric operations.

Dr. R. Davis, of Wilkesbarre, Pa., in an excellent address on Obstetrics, delivered before the Medical Society of Pennsylvania in 1876, while commenting on the early use of the forceps, declares that " the employment of the forceps in the manner and for the purpose here described is not so new to the obstetricians of this country as it appears to be to the *savants* of Dublin. I am only stating what has been frequently said before, when I say that the use of the forceps has a much wider range and latitude in this country than it has either in Great Britain or on the continent. To apply the forceps before the os uteri is fully dilated is in this country an event of no uncommon occurrence."

2. *Placenta Previa* is another complication in which the early use of the forceps has proved of signal advantage, even when the introduction had to be made through an os but partially dilated.

Dr. J. S. Eshleman, of Philadelphia, is said to have been the first to apply the forceps in placenta previa, through an os uteri of only one and a half inches in expanse. (*Philadelphia Medical Times*, March 20 and August 14, 1875.) In one case a living child was delivered, and in both instances the forceps proved satisfactory as a dilator of the cervix uteri, and successfully controlled the hemorrhage.

Dr. R. Davis exemplifies the advantage of resorting to the forceps in placenta previa in head-first cases by a report of twenty-eight cases, in fifteen of which the instrument was applied through a partially dilated os, with *only one* maternal death from heart-clot, occasioned by the imprudent and early exertion of the parturient. Six children were born alive, and failure to deliver living children occurred in only three instances, where the condition of viability had been reached.

From this outlook it is clear that the early resort to the forceps in placenta previa is a procedure fully deserving of our earnest consideration amongst the various methods of treatment, and is apparently a safer expedient (in head-first cases) than the time-honored method of turning. It may not be out of place to indicate here the method pursued by Dr. Davis, which is a modification of the plan suggested and pursued by Dr. Barnes, of London. (1.) To promote dilatation of the os and control the hemorrhage by the use of Molesworth's or Barnes' dilators, preceded, if necessary, by a sponge-tent. (2.) Tampon or colpeurynter. (3.) Ergot, if the presentation should not be transverse. (4.) Then, if the placenta is not implanted over the os, the membranes should be ruptured, and if the hemorrhage should not cease, apply the forceps according to Dr. Eshleman's method. If the placenta should be centrally implanted over the os, it should be detached laterally and crowded to one side, and the forceps applied, and by careful downward traction the head should be brought in apposition to the bleeding vessels of the cervix uteri.

3. Again, the head from malposition may prove an obstacle to the progress of labor, or it may become stationary from uterine inertia, or advance slowly and tediously from deficient expelling power. Here the inefficient vis a tergo may be happily reinforced by the vis a fronte of the forceps.

4. Again, the labor may be retarded by a disproportion relative or absolute between the head and the pelvis; here the forceps may be required, and should the conjugate diameters be faulty, the promontory of the sacrum must be rounded, in nautical phrase, by traction with the forceps in the course of what Barnes aptly calls the false curve of the promontory.

5. In all cases of ante-partum convulsions as soon as the os uteri is sufficiently dilated, either spontaneously or artificially by dilators, the forceps may save the child, as I have had the good fortune to do myself.

6. In occipito-posterior positions of the head, traction alone by the forceps should be tried, to bring the head to the floor of the pelvis, where rotation usually occurs, owing to the resistance by the perineum which forms a natural valve or plane promotive of the movement forward of the head towards the pubes. Under simple traction, with a minimum compression, rotation may occur spontaneously, even within the blades of the forceps, as I have myself seen or known to occur. The employment of traction *alone* in occipito-posterior positions, and trusting to nature for rotation, has received the high sanction of Barnes and other modern authorities, and is one which Playfair says, in his recent excellent work on midwifery, commends itself as the most reasonable and scientific.

7. The forceps may be again required in some face presentations, and in cases of pendulous uterus, in which the contractile and expulsive efforts are misdirected and inadequate.

8. When the soft structures of the utero-vaginal channel offer an obstacle to the steady advancement of the head from undue

rigidity, which occurs most frequently with primiparæ, leading to physical exhaustion and demoralization of the parturient. After a tentative appeal to the calmative effects of chloroform or chloral hydrate, relief should be afforded by the forceps in the interest alike of mother and child.

9. In head-last cases, manual extraction may be all that is necessary where there exists no disproportion between the after-coming head and the pelvis. Yet the forceps may become necessary, as Chailly, Cazeaux, Tarnier, and Barnes alike declare.

Dr. C. D. Meigs both practised and warmly advocated their employment in head-last cases.

Busch, of Berlin, attributes the success attained by himself in turning to the use of the forceps. In forty-four cases in which turning was resorted to, and the after-coming head delivered by the forceps, three only of the children were lost.

Dr. J. Grynfeltt (*Annales de Gynécologie*, September, 1874), in advocating the employment of the forceps for the extraction of the fetal head after the delivery of the trunk, when the head of the fetus is detained in the excavation or at the inferior strait, presents in résumé of the discussion the following conclusions:

1. In *occipito-pubic positions*—Raising the trunk of the fetus as far as possible and applying the forceps *below and upon the sternal side*, making traction forwards and from below upwards, so as to disengage the occiput in a parallel position of a cranial presentation. This method is pursued by the French and Germans.

2. In *occipito-sacral positions*; the head being in a state of flexion, depressing the trunk as much as possible and applying the forceps *above* and upon the sternal side; making traction forwards from above downwards, in order to disengage the face first at the anterior commissure of the vulva. And as in an occipito-posterior position with the head first, it is necessary when the occiput reaches the *anterior border of the* perineum, to make traction forwards and from above downwards.

3. *Occipito-sacral position*, with the head extended (the chin separated from the chest). Raising the trunk as much as possible and applying the forceps *below* and *upon* the *dorsal side*, making traction from above and downwards, in order to complete the extension of the head and engage the occiput first

at the perineum, making a sort of accouchement by the face, with the face upwards. This is the German method.

The method of applying the forceps in head-first cases.[1] I am strongly of the opinion that the application of the forceps, either long or short, should be *pelvic* rather than cephalic. With the short forceps the pelvic application is not so material, as they are not used until the head is at or below the pelvic outlet. But with the long, double-curved forceps, the introduction is easiest along the sides of the pelvis, and their application in accordance with the curved axis of the pelvic channel adapts the cephalic (its outer convex surface) and pelvic curvatures of the instrument to the anatomical peculiarities of the pelvic cavity. So that the instrument may be said to lie coincident with the pelvic structures, from the superior strait to the outlet, and, therefore, is clearly applicable as a tractor, whether the child's head be high or low at the brim, within the pelvic cavity or below the outlet. In recognition of the correspondence, of which I have spoken, the illustrious Pajot has well said that *the rule for the introduction and withdrawal of the forceps, is to follow the circle of which the instrument forms a part.*

I am fully aware that in advocating the *pelvic application* of the forceps, I am running counter to many of those high in position and of recognized authority in matters obstetrical. My convictions are the results of experience. Years ago I was led by fortuitous circumstances to question the reasonableness of exclusively teaching the cephalic method of applying the forceps.

Having been a pupil of the illustrious obstetrician Hodge, I was taught to apply the forceps according to the position of the child's head (cephalic method). I can well recall the circumstances of a case within my earliest professional experience, in which, after vainly trying to make the cephalic application of the forceps to a head situated obliquely in the pelvic cavity, it occurred to me, in my discomfiture, to make the introduction and application in accordance with the sides of the pelvic cavity. The blades were carried with comparative ease and facility into position. This experience made a deep impression, for it gave the black eye to the assurance and confidence acquired by earnest practice over the phantom; and was an innovation upon the precept and practice of the masters of the art. Though my then youthful sense of the obstetrical proprieties was severely shocked, yet I soon recovered, and from that period to the present, whenever the occasion has arisen, I have followed altogether the pelvic method. I feel assured that the forceps, when thus applied, are as little likely to occasion disfigurement of the fetus as the cephalic application; as I have not seen, during the last twelve years of a somewhat active obstetrical practice, any impression made by the forceps but those of transient duration and unimportant in character. As the face of the fetus is relatively much smaller than the cranium, and the head being usually in a state of flexion, the impressions of the instrument, when produced, do not extend higher than the forehead.

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[1] C. C. P. Clark, M.D., Oswego, N. Y., has written a most practical, thoughtful, and suggestive paper on the *Management of the Forceps* (American Journal of Obstetrics, etc., May, 1871).

It has been urged against the pelvic application of the forceps, that the head, when in their embrace, in one of the oblique diameters, is liable to an increase in the transverse or biparietal diameters. Observation, however, has shown that this is by no means the invariable result. The experiments of MM. Joulin and Chassagny have conclusively demonstrated that with the gradual and continuous traction by the forceps, and their consequent compression, the moulding of the head occurs, just as it is elongated, in normal labor, by the resistance of the pelvic structures. "The head, originally spherical, becomes conical as the labor progresses, with an increase in the occipito-mental diameter of the child's head with a diminution of the interparietal." Barnes and Ramsbotham are clear and decided in this declaration, which will doubtless receive the endorsement of those who have closely observed the effects of moderate compression, and none other is justifiable by the forceps. I should certainly feel much hesitancy in proclaiming the utility of the pelvic application if I stood out alone against so many who employ the cephalic method as the application par excellence.

Barnes, Schroeder, and Playfair are emphatic in their support of the pelvic method; and Ramsbotham, while teaching the cephalic, confesses that in practice he has for many years followed the pelvic method. From a former pupil and late assistant of Scanzoni, Dr. Paul F. Mundé, I have learned that Scanzoni, as do the majority of German obstetricians, counsels his pupils to pay no attention whatever to the position of the fetal head as regards the direction of the sutures and situation of the fontanels, but to apply the forceps on either side of the pelvis, as the head would usually rotate into position within the blades of the forceps, and even if it did not it was unsafe to apply the forceps parallel to the sagittal suture, and try to rotate by force. Upon the question of attempting rotation in occipito-posterior position of the head, Dr. Barnes employs the following emphatic language: "The blades should be applied to the sides of the pelvis. They will be guided by the head into the most suitable position; extraction then, simply without troubling yourselves about rotation, is all that is necessary." If an effort at rotation by twisting the forceps is discountenanced under the circumstances referred to, a fortiori, such a resort, under less urgent conditions, is clearly unjustifiable. Simple traction is all that is generally necessary, though the leverage power of the instrument may at times be advantageously invoked by gently moving the handle from side to side consentaneously with the traction, leaving rotation to be accomplished by the most admirable mechanism which nature has provided in the anterior and posterior planes on either side of the pelvic cavity. The advantages of the *pelvic application* are many. It is fully as little likely to do injury to the child's head as the *cephalic* method of using the forceps. It reduces the chances of injury to the mother's soft parts to a minimum, as the blades of the instrument and the structures of the pelvis are consonous. It eliminates the necessity of knowing the exact position of the head, which *an honest confession* must aver cannot always be clearly and satisfactorily made out.

This pre-requisite of the cephalic method has been the occasion, no doubt, of much hesitation in the use of the forceps, and the cause of much discreditable fumbling. It is a method easier of accomplishment than the cephalic—just as a plain and well-macadamized road is more readily followed than an ill-defined route with numerous intersections, where the signboards are often indistinct or wanting.

THE FARADIC TREATMENT OF UTERINE FIBROIDS.

BY
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Were we to form an opinion from the standard works on surgery, as to what constitutes the proper treatment of uterine fibroids, that opinion would be that the proper treatment is to let them alone. But, thanks to a few progressive minds, the profession is rapidly emerging from the shadows of the past, and daring to think and act for itself, using such therapeutic agents as common sense and experience suggest.

According to the universal testimony of the leading authors, surgical interference with subperitoneal and interstitial fibroids has caused grave results. But ergot has been used endermically, per orem, and also thrown into the substance of the tumor with marked success, by such men as Hildebrandt, White, Byford, Chroback, Jackson, and many other lesser lights.

Judging, then, from analogy, we are led to the conclusion that the faradic current will also be a valuable agent in causing the reduction and extrusion of these morbid growths.

Having used it many times with entire success in cases of inertia uteri, placenta previa, and post-partum hemorrhage, and having been annoyed by the unsatisfactory and dangerous effects of ergot, I was led to try the faradic current in a case of uterine fibroid, and the result was very gratifying.

The principal objections to the use of ergot in these cases are: the difficulty of obtaining a reliable preparation; its tendency to disturb nutrition and the secretions; the alarming cerebral symptoms which frequently follow its continued administration; its tendency to produce local inflammations of the stomach, bowels, or uterus; the intense pain always, and the abscesses usually produced by its hypodermic administration. These, with other minor reasons, induced me to place my chief reliance upon the faradic current as the most desirable agent in the treatment of the following cases in my practice:

CASE I.—July 1, 1872, I was called to see Mrs. H. S. W., aged 37, multipara. I found patient much exsanguined and very weak. She had been troubled for two years with exhausting hemorrhage, usually at the monthly epoch, but occasionally in the interval. For the last two months there had been no cessation, and it was now alarming.

On making an examination, I found the uterus much enlarged, extending half way to the umbilicus, and at the patulous os was presenting the apex of an ovoid fibrous polypus, with pedicle attached to the fundus uteri. As the patient had been already thoroughly ergotized, until the stomach rejected all medicine, by another physician, who was treating her for a suspected miscarriage, electricity appeared to me to be the only admissible remedy, and I proceeded to use it in the following manner:

Placing the negative electrode—a copper disc, protected by a moistened cloth—at the sacro-lumbar junction, I used my hand as the positive, grasping the fundus of the womb, and pressing downward and backward, and passed a current from a double Smee cell through a Kidder helix. This treatment was continued for twenty minutes, during which time the enlarged uterus could be felt to contract strongly, and at the termination of the séance the flow had almost entirely ceased, and gave no further trouble during the treatment. The faradic treatment was continued daily, accompanied by the free use of iron and quinine as soon as the gastric irritability permitted.

July 25th, the os being well dilated and the walls retracted, I seized the tumor with a pair of strong forceps, and twisting off the pedicle, removed the growth, which was the size of a goose's egg. No hemorrhage occurred after the operation, and the patient made a good, though slow and tedious recovery. She has since borne a living and healthy child.

CASE II.—I was consulted in the spring of 1873 by Mrs. H. S. B., aged 32, mother of two children, who complained of intense dysmenorrhea, with menorrhagia and severe general disturbance at the menstrual epoch.

As no examination was permitted, I simply prescribed an anodyne, with alteratives and tonics. I saw the patient at irregular intervals during the summer and fall, but she was making no progress; on the contrary, the symptoms of pain and hemorrhage became more marked, and a cachetic appearance gave rise to grave fears of carcinomatous degeneration.

Late in the autumn, becoming disgusted with this treatment at arm's length, I insisted upon either an examination, or a change of physicians. An exploration then being granted, I found the os very much ulcerated and indurated, and, in the anterior wall of the cervix and body, a tumor of the size of a pigeon's egg. The os was treated locally and yielded promptly, and the patient was put upon a treatment of the faradic current as often as possible, in the same manner as in Case I., and, in addition, she was given the iodide and the bromide of potash and ergot. But, as the patient was very erratic in her habits, the sittings were not frequent.

In June the patient moved to an adjoining county and came under the care of a skilful practitioner, who agreed with my diagnosis, and pursued the same course of treatment until the end of July, when the patient became pregnant and the treatment was suspended.

At full term the patient was delivered instrumentally, her labor being tedious. Hemorrhage of an alarming nature followed, which was controlled by the faradic current, which induced strong contractile pains, expelling the placenta and a sub-mucous fibroid the size of a hen's egg.

The patient made a slow recovery, being troubled for a long time with chronic pelvic cellulitis.

Case III.—I was called, May 24, 1874, to see Mrs. R. H. W., aged 23, the mother of one child. The patient complained of a swelling in the left ovarian region, accompanied by severe pain and more or less profuse menstrual hemorrhage and leucorrhea. Examination revealed a submucous fibroid of the size of a fetal head enclosed in the posterior uterine wall. As the patient was a strong advocate of homeopathy, and "could not take strong medicine," and as there was no urgent demand for medication, I decided to try the faradic current alone.

This treatment was given daily for half an hour at each séance, with marked decrease in the size of the tumor, until the 28th of August, when an intense pain ruptured the mucous membrane of the uterus overlying the tumor, and expelled the growth, which had become atrophied by the constant pressure upon it. The patient made a rapid recovery.

Case IV.—I was called, July 17, 1874, to see Mrs. H. Le F., nullipara, aged 42. I found the patient much exsanguined from the effects of profuse flooding, from which she had suffered at intervals for the last 12 or 14 years, but which during the last 10 months had been almost constant, accompanied by but slight pain and no disagreeable symptoms except weakness and prostration. On examination I found the womb extending upward to the ensiform cartilage, occupying two-thirds of the abdominal cavity. Internally I found a fibroid tumor, filling the entire pelvic cavity and presenting at the distended os. As the hemorrhage was alarming, I gave a hypodermic injection of the aqueous extract of ergot, which lessened the flow somewhat, and caused slight contractile pains. This was repeated several times, but as painful abscesses were the result, I was obliged to desist; and, as the stomach rejected the ergot, I threw a solution of the extract into the uterine cavity, through a male catheter attached to a syringe; the first two injections of this kind worked well, but the third produced such grave symptoms of peritonitis, that I was forced to fall back upon the faradic treatment alone.

July 28th.—I introduced four silver insulated needles three or four inches into the substance of the growth through the vaginal orifice, and connected these with the negative pole of a 20-cell battery, placing the positive pole, in shape of a copper disc, on the abdomen. This treatment was followed by a free escape of serum, which gradually changed to fluid of a purulent character; the latter continued for several days. This treatment was repeated upon the fifth day with like results, and by the 12th of August the bulk of the tumor was greatly diminished. August 20th I passed a platinum loop around the lower third of the growth, attached it to a galvanocautery battery, and with gentle traction severed this portion of the tumor and removed it. No hemorrhage or depression following, I continued the daily faradization. Sept. 25th, the tumor being greatly reduced in size and the os well dilated, I passed the platinum loop around the pedicle and removed the tumor entire, notwithstanding its enormous size. The patient made a rapid recovery, and is now enjoying good health.

CASE V.—I was consulted in the spring of 1875, by Mrs. S. E. B., aged 42, mother of one child. The patient complained of intense pain in the right ovarian region and severe nervous disturbances at the approach of the monthly epoch, with nausea and vomiting, and profuse and often exhausting hemorrhage.

Upon examination I found a submucous fibroid of the size of a goose's egg, involving the posterior wall of the uterus.

As the patient lived a long distance from the city, I simply prescribed iod. pot. and ergot, but, on account of the gastric irritability, I was obliged to stop this and advised her to come to the city and submit to faradization. June 1, 1876, after waiting a year, the patient came, and I commenced the faradic treatment daily, with general tonics internally. June 15th, the tumor has lessened in size considerably and the flow is entirely controlled.

July 25th.—The os being well dilated and the womb pressed well down into the pelvis, a probe-pointed bistoury was passed up along the finger into the uterine cavity, and the mucous membrane along the entire length of the growth divided deep into the substance of the tumor. The induced current was at once applied, and the hemorrhage from the incision controlled.

On the 28th, during the treatment, a fragment of the tumor was expelled, and similar fragments continued to be extruded spontaneously until August 8th, when the patient was compelled to leave town and return home. Treatment was suspended from this time on, and the patient was put on the use of ergot, which was now well borne. This was continued for some months, when, as the tumor had entirely disappeared, all treatment was suspended.

CASE VI.—I was called in haste, July 19, 1876, to see Mrs. M. H., aged 38, mother of one child. I found the patient suffering with intense pain, which she called colic. Upon placing the hand over the abdomen, a tumor of the size of a child's head was discovered in the right inguinal region, which upon further examination was found to be an interstitial fibroid.

As the colicky pains from which the patient was suffering were induced by the contractions of the uterus, and as this was just what

I wanted, the indications were to reinforce and assist nature. I therefore applied the faradic current, and gave internally a capsule containing pulv. ergot and the syrup of ustilago mydis. This course was continued without interruption for seven weeks, with marked decrease in the size of the tumor; then, as the ergot disagreed with the stomach, it was left off, and the week following the ustilago was also discontinued, and the faradism continued for six weeks longer, when, as the tumor had nearly disappeared, all treatment was discontinued.

Case VII.—I was called, August 15, 1876, to see Mrs. J. H., a Swede, aged 37, mother of four children. I found the patient exsanguined to the last degree. Examination showed a fibrous polypus depending from a pedicle the thickness of a man's thumb, attached to the fundus uteri. As the patient was exceedingly weak and the flooding was profuse, not having a battery with me, I put the patient upon half-drachm doses of fl. ext. ergot, and ten-drop doses of tr. ferri chloridi alternately every four hours. Aug. 16th, the patient being but little improved, I used the induced current 30 minutes, which stopped the flow at once and produced good contractile pains. The daily treatment with the secondary current was continued for three months, with iron and quinine as needed.

November 18th.—As the tumor had now contracted to the size of a hen's egg and become hard and cartilaginous, and no improvement had been perceptible for the past few weeks, a silver ligature was passed around the pedicle, a probe-pointed bistoury passed up along the finger, and the pedicle severed with much difficulty on account of its density. The tumor was now withdrawn, and presented the appearance of white fibrous tissue.

The patient from this time on made a rapid recovery.

Case VIII.—I was consulted in the spring of 1876 by Mrs. D. B., aged 58, mother of two children. The patient complained of a profuse hemorrhage which had been troubling her for some months. An examination was refused, and the patient was given an astringent solution to use daily as a vaginal wash, and ordered to keep quiet. In order the more faithfully to follow these directions, the patient made the tour of the Centennial. On her return, much exhausted from the excessive hemorrhages which she had been subjected to during her journey, she came and requested an examination. I found the uterus extending nearly to the ensiform cartilage, bound firmly to the right side, and quite immovable, completely filling the pelvic cavity. The probe passed into the uterine cavity 11½ inches, showing a submucous fibroid occupying the anterior wall, and measuring about 4½ inches in diameter, as nearly as could be estimated. I at once commenced faradism, and gave ergot and ustilago. This was continued for four weeks, with good results; but at this juncture the stomach became rebellious, and the medicine was discontinued, and in its stead the aqueous extract of ergot administered hypodermically. But this caused painful abscesses, and was in turn discontinued. I next threw a quantity of the same preparation into the uterine cavity, but this produced such alarming symptoms that I was compelled to fall back upon the faradic current as my last resort. January 1st, the tumor being greatly lessened in size, I thrust an insulated needle deep into the substance of the growth from the vagina, and used a strong induced current.

At the commencement of this treatment the hemorrhage was profuse, but after the current had passed for a moment it was checked. The mucous membrane soon ruptured along the most prominent portion of the tumor, and the mass bulged out into the uterine cavity, and soon became separated in the centre, remaining adherent at either extremity.

January 28th.—I seized a portion of the mass with strong forceps, and twisted off several large fragments. The faradism was continued until March 28th, when, as no further improvement was manifested, and the os was very rigid, the patient was etherized by my colleague, Dr. S. W. Gillespie, and I divided the sphincter by a free incision. The tumor was then seized, and strong traction made, but without bringing it down much. The finger was then passed up along the side of the growth, and the various bands of adhesion broken up as far as the finger could reach. Another unsuccessful attempt was then made at enucleation, and as the tumor was so firmly bound down to the uterine wall, and that in turn to its pelvic surroundings, I then proceeded to tear off as much as possible of the substance of the tumor with strong forceps, and succeeded in removing in this manner about two pounds of tissue. As the patient now began to show symptoms of exhaustion, I concluded to suspend operations. The patient recovered from the effects of the operation with marvellous rapidity, and although there was a profuse purulent discharge, there was not the first symptom of septicemia. The patient is now coming to the office for treatment, the remains of the tumor being about the size of a goose's egg, and the womb being quite movable in the pelvic cavity.

CASE IX.—Dec. 21, 1876, I was called to see Mrs. S. A. H., aged 48 years, mother of seven children, of fleshy, robust habit. I found the patient suffering agonizing uterine pains, with a profuse sero-sanguineous discharge from the vagina; feet and ankles edematous. I found a fibrous polypus of the size of an orange occupying the cavity of the uterus.

The use of the faradic current was commenced, and continued daily until the 5th of January. In the meantime I attempted to use ergotine hypodermically, but the patient complained so much of the pain and inflammation attending the punctures, that after the fifth trial I was forced to discontinue their use.

January 8th.—The tumor being greatly reduced in size, and the os well dilated, the tumor was seized with strong forceps and twisted off without difficulty. The patient stood the treatment remarkably well, and is now coming to the office daily for further treatment.

The conclusions at which I have arrived, from a review of these cases and others which have been reported, are:

1st. The faradic current, if judiciously used, is equally potent to produce uterine contractions as the preparations of ergot.

2d. It is more easily controlled, can be begun or discontinued at a moment's notice, and the dose can thus be more judiciously apportioned.

3d. It never disturbs nutrition or the secretions, and does not interfere with digestion.

4th. It never produces pain in distant organs, is followed by no cephalic disturbance or nervous shock.

5th. It never produces inflammations or other local injury.

CONGENITAL OCCLUSION AND DILATATION OF LYMPH CHANNELS.

BY

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(With 56 woodcuts.)

(*Concluded from October number, page* 605.)

CASE LXXV.[1]—Adolph A., æt. two months. In the dorsal decubitus of the patient, the entire right half of the thorax and lumbar region was occupied by a tumor which extended upwards to the axilla, downwards to the crista ilii, inwards to within one inch of the sternum, and backwards to the transverse processes of the vertebræ. The covering integument was traversed by small dilated veins, and presented several bluish elastic places. Upon the external side of the tumor was a venous teleangiectasis one and one-half inches long by one wide. The surface of the tumor was hilly, and in one place the skin was retracted in an umbilicus-like manner. It was elastic, fluctuated at most prominent part, could be diminished somewhat by pressure, and became full and tense during the crying of the child.

[1] Hofmokl, Langenbeck's Archiv, vol. xii., p. 685.

Nothing abnormal in the thoracic or abdominal organs. At its upper part it was somewhat transparent. The tumor collapsed after evacuation of the fluid, and seemed to consist of caverns which communicated one with another by numerous canals. The fluid was alkaline, coagulated spontaneously. Microscopically a small number of lymph-cells could be demonstrated. 100 grammes of the fluid contained: serum albumen, 2.385; fibrin, 6.085 gr.; globulin in small quantity, and salts of the blood serum. No lymph-vessel epithelium could be discovered.

Case LXXVI.[1]—A.W., æt. one year and five months, had a congenital tumor of the size of a pigeon's egg, of hard consistency, situated to the left of the perineum in the immediate vicinity of the scrotum. At the time of the observation the tumor had grown to the size of an infant's head, and extended from the scrotum attached to the left of the perineum, to behind the anus, sending the principal mass towards the left tuber ischii, and looked like a third buttock. The primary portion had grown but little and felt hardish, whilst the new growth felt more like a lipoma or cavernous growth, and formed the principal part of the mass. The child was otherwise healthy, ate, drank, and possessed all the normal functions.

Microscopic examination of the ablated portion by Professor Waldeyer. It consisted, for the greatest part, of normal cutis, with subjacent, perhaps inch thick, fat connective-tissue cushions. The fat clusters, however, were but little developed; the interstitial connective tissue was more prominent and formed in spots tolerably firm, but always elastic, yielding masses. In the place of the fat cushions, single, mostly pea-size, clear cysts, with thin walls, were seen lying in the connective-tissue meshes. In the larger integumentary portions one of the cysts attained nearly the size of a walnut. The smallest looked like beads, clear as water and of pin's-head size.

A piercing injection filled several of the larger and smaller cystic cavities, so that a communication existed between them as well as with the lymphatic lacunæ in the connective tissue. Upon section, a perfectly clear, slightly adhesive fluid of weakly alkaline reaction was evacuated, which coagulated spontaneously into a beautiful, consistent jelly. The microscope showed, besides isolated red blood-disks and a small quantity of finely granular coagulum, only ameboid corpuscles in moderate quantity, of the character of ordinary lymph-corpuscles throughout. The cysts, even to the smaller ones, were composed of intercommunicating compartments. Their walls consisted of fibrillar connective tissue, upon the interior surface of which could be demonstrated the contours of beautiful lymphatic endothelium.

In the more compact connective-tissue accumulations were found, after hardening in alcohol, smaller, irregularly formed cystic cavities, and larger cleft-like lacunæ, which were filled with granular coagulum and lymphatic cells, such as were obtained from the larger cysts in the recent state. Prof. Waldeyer classed the case among lymph-angiomata.

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[1] Reichel, Virch. Arch., vol. lxiv., p. 497, 1869.

CASE LXXVII.[1]—A female, aged nineteen. At the age of nine, while playing, was suddenly attacked with severe pain in the left groin, attended with redness and accompanied with vomiting and chilliness. These attacks recurred thrice a year until four years ago, when a number of small vesicles formed upon the inner side of the thigh, which ruptured spontaneously and have continued to discharge a clear fluid. At the present time (July, 1869), a tumor, about the size of a fist, indistinctly defined and perfectly soft, is situated upon the inner side of the left thigh, below Poupart's ligament. The covering integument is traversed by several dilated vessels supplied with several openings, from which a fluid can be expressed, which coagulates into transparent, pale jelly. Instead of a cold abscess Prof. Billroth found a cavity of fine mesh-work from which the fluid exuded, which proved to be of a lymphatic character, as shown by the following analysis:

Reaction, alkaline; sediment, large, consisting of fibrin. The fluid, in its principal bulk, consisted of albuminates, among which were serum-albumen, fibrin and caseine. The sediment contained fibrin coagula, in which were found numerous colorless blood-corpuscles, a few red blood-corpuscles, some tissue débris, consisting of connective tissue and pavement epithelium.

Quantitative analysis: specific gravity, 1.017; water, 978; ashes, 8.125; fibrin, 1.000; globulin, 1.204; serum-albumen, 5.494; caseine, 5.518; phosphoric acid, 0.200; lime, 0.252; chloride of sodium, 2.245; and sulphuric acid, 1.034.

Microscopic examination of the extirpated tumor by Czerny.

The principal bulk of the tumor consisted of connective-tissue trabecular mesh-work, which contained lymph in its interstices. The walls of the lymph-caverns were lined by endothelium. Here and there, especially in the periphery, the connective tissue was richly infiltrated with cells, and columns of young cells passed into the surrounding tissue, which were connected with lymph vessels. The tumor seemed to owe its origin to the development of granulation tissue around the lymph-vessels, which, by cicatrization, produced ectasia of the vessels, and thus led to the formation of a cavernous lymph-tumor.[2]

CASE LXXVII.[3]—R. Z., æt. 22. During his fourth year began to grow thin without assignable cause, and then his mother noticed a small, painless node upon the right side of the chest and a small protuberance upon his forehead. These were followed by numerous similar growths upon different parts of the body, but the chest tumor distinguished itself by its continued growth, so that in 1864 it measured in length thirty-five centims., and hung in a pouch-like manner from the third rib to a line drawn horizontally outward from the umbilicus. At its places of attachment, which extended from the axilla to the middle of the sternum, its circumference was thirty-four centims., and thence from above downwards, flattening a little, reaching a thickness of fifteen to twenty centims. (See Fig. 43.) Its surface was covered with secondary nodes, from cherry to apple size, which lay closely together, and were distinguished from the dirty, corrugated and scarred skin by a reddish, pale color; the skin was traversed by abundant venous networks, and along the convex edge was covered by bran-like scales. The entire sac felt strong and elastic to the touch, could be lengthened by traction, and could be thrown over the shoulders. No nipple could be discovered. Besides this tumor the trunk and extremities were abundantly covered with larger and smaller growths. Three were situated upon the head; one as large as a pigeon's egg occupied the centre of the forehead; two, each the size of hen's eggs, were situated symmetrically, one upon each mastoid process. The entire back was sown with smaller nodules, and two were found on each side of the linea alba. All these nodes had a smooth surface, were of soft consistency and of lighter color than the surrounding dirty brown skin. The tumor weighed after extirpation three and a half pounds, and presented upon the dry, pale brown cautery surface a firmly meshed tissue. The cortical layer, of an average thickness of three centims., consisted of round juicy nodes, of the average size of a cherry and of a yellowish color, and were inclosed by a strong, firmly-fibred interstitial substance in which the vessels and numerous cystic cavities of from millet to lentil size were found, from which a clear albuminoid fluid was discharged. Microscopic examination revealed cutis papillæ, more broad than high, a relatively thin, brown rete-Malpighi, with superficial, sparse, horny epidermis cells. The sebaceous glands appeared at places to have degenerated into lentil-sized sacs filled with fat granules and closed toward the integumentary surface. The deep nodules of the cortex of the tumor were composed of aggregations of round or oval, mostly multinuclear cells of the size of pus-corpuscles; the superficial, however, were composed of nets of anastomosing nuclear connective-tissue cells, whose branches bounded very small and regular mesh-cavities, and uniting with the fibre-layers of the interstitial substance inclosing them in a ring form, presented an areolar appearance. The fibre-trabeculæ found between the latter consisted principally of elastic tissue. The lymph-vessels formed nets with wide, oval mesh-cavities. Their diameter varied from 0.03 to 0.05 mm. In such regions as

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[1] Gjorgjewic, Arch. f. klinisch. Chir., Langenbeck, Bd. xii., p. 646, 1870.

[2] The congenital character of this case is doubtful. The manner of its development is so nearly identical with the case of Demarquay (No. 50), that I have felt compelled to introduce it.

[3] Bryk, Oester. Zeitschr. für pract. Heilkunde, vol. xv., No. 41, p. 141.

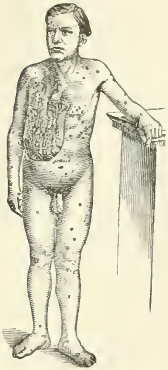

Fig. 43.

were rich in lymph-vessels round or oval parenchyma-lacunæ were seen, which, like the microscopically cystoid cavities, were lymph-vessels. The central portion differed from the peripheral layer by a firmer texture and a strikingly brown-red color. A strong, fibrous trabecular network, which passed from above downwards, corresponding to the longitudinal diameter of the tumor, received numerous dense connective-tissue nodes. Small fat lobules were scattered here and there, associated with a wealth of vessels, especially veins, so that the tumor acquired a teleangiectatic appearance. The entire tumor, adds Prof. Bryk, presented a congenital character.

Case LXXIX.[1]—S. K., aged 50, had had from her earliest recollection a bean-like prominence upon the left labium majus. Observed after the menses had ceased for two years, that it enlarged, became pediculated and began to develop into a globular tumor, which hung between the thighs. Inguinal glands of left side swollen and painful; and upon palpation a diffuse, painful induration was felt in the left side of the pelvis. In consequence of a superficial ulceration a sero-purulent fluid had been discharging for several months from the tumor.

The tumor, after removal, measured twenty-eight centims. in circumference. The bronzed-colored surface of the movable, hairless skin was smooth. Upon section a large quantity of serous fluid exuded, which coagulated spontaneously. White connective-tissue strands traversed the tumor in every direction, and gave it a finely lobulated construction, which was interrupted by numerous cysts, varying in size from a millet-seed to that of a bean. Upon microscopic examination a cutis tissue could be demonstrated upon the most depending portions, the papillæ of which, more broad than high, were supplied with capillary vessels with thickened walls. In all other parts the boundary between the cutis and the bulk of the tumor was obliterated, and the latter consisted of a finely-meshed network of spindle-cells which were crossed in all directions by elastic fibres and undulatory connective-tissue strands, between which, in many places, conglomerations of nucleated cells were imbedded, which were in a state of fatty degeneration. The lymph-vessels were very abundant, and in connection with the elastic and connective-tissue fibres, formed the principal part of the tumor. The bead-like, dilated larger branches showed thickened walls covered by layers of fine spindle-cells divided in the vicinity of the cysts into varicose networks with wide meshes, and here and there attained a diameter which corresponded to the lumen of the cystoid cavities. They were lined by a delicate epithelium of small, round nucleated cells. Towards the periphery they gradually became smaller and smaller. Fat-cells were found only in the most dependent part of the tumor immediately beneath the corium in the form of isolated vesicles, and smaller than the cells of the normal panniculus adiposus.

Case LXXX.[2]—H. K., æt. 14 months, was born with a cherry-like, flat node, situated upon the mons veneris, a little to the right, which began to increase very rapidly soon after birth, and at the age of one year and six months had attained the size and form of a bunch of grapes, as represented in Fig. 44, was movable in all directions, and rose from the integument of the mons by a short pedicle, which became distinct upon traction downwards and during the erect position of the child; it arched over the right inguinal region, covering the external genitalia, and descending in an oblique manner from above and the right side to below and to the left, between the thighs down to the knee-joint, with a vertical diameter of thirty centimetres; its circumference at the pedicle was twenty centimetres; at its base in the height of the inguinal fold thirty-eight centimetres. Upon elevating the tumor it was discovered to have intimately grown with the labia majora, but the nymphæ and clitoris were normal. The skin was traversed by numerous venous nets, could only be lifted up in a fold in the region of the pedicle and at the upper portion of the tumor, at other places it was firmly attached. Upon its surface rose larger and smaller nodes of soft consistency, disappearing under pressure, when a deep-seated annular constriction could be distinctly recognized as boundaries between the single protuberances.

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[1] Prof. Bryk, loc. cit., p. 249.

[2] Idem, p. 208.

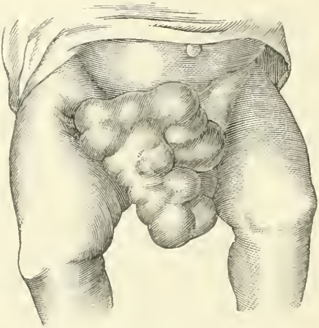

FIG. 44.

After the extirpation of the tumor, one and a half pounds in weight, a large quantity of serum-like fluid, which coagulated spontaneously, was discharged, after which the nodes collapsed, and only a loose, firmly meshed connective tissue remained, which was permeated by white tendinous strands in various directions. Vascularity was not considerable, only two small arteries had to be ligated; the veins were more numerous, and several were varicose. Upon microscopic examination a network of anastomosing connective-tissue cells, with regular mesh-cavities were found in the places of the soft, fluctuating nodes, surrounded by elastic fibre strands, between which capillaries with thickened walls and lymph-vessels were imbedded. Fat-cells were exceedingly rare in the form of single lobules at the base of the tumor. Fig. 45 represents another view of the growth.

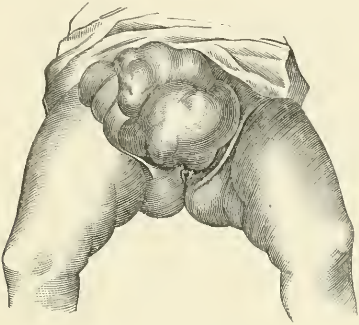

Fig. 45.

Prof. Bryk concludes the report of the last case with a reference to a plaster cast in the collection of the surgical clinic at Cracow, of a case observed in a woman 30 years old, in which a "pale red prominence found at birth in the vicinity of the mons veneris, which gradually bulged forward to the size of an apple," and at the appearance of the catamenia began to grow rapidly, had at the time of the observation "extended downwards between the knees and terminated in a rounded, melon-shaped intumescence," which measured forty-four centimetres in circumference. During the progress of the growth "little vesicles appeared at every menstrual period upon the surface of the tumor, which ruptured spontaneously and discharged a milky fluid. Each vesicular eruption was followed by increase of the volume of the tumor." Prof. Bryk invites special attention to the difference in the progress of development which characterized the tumors in case 79 and in the case just referred to, and insists that such growths are usually interrupted in their development, and, in the congenital forms, their course is very slow until the catamenia are established, when with every recurring menstrual period the volume of the tumor is greatly augmented. In case 80 the increasing growth seems to have been coincident with birth, and this, Prof. B. claims, constitutes its exceptional character. Others have observed the apparent connection between the menstrual recurrences and increased development of lymphatic tumors, but it is not an invariable rule. In case 79 the bean-like prominence which had existed from birth upon the left labium majus did not begin to increase until two years after the menopause. The following case reported by Dr. James R. Chadwick, of Boston, exhibited a marked connection between the development of the lymphangioma and the periodic discharges.

CASE LXXXI.[1]—Miss L., aged thirty-two, had suffered for six years with hystero-epileptic convulsions, which were supposed to be due to the presence of a tumor "at the vulva, first observed about the time the convulsions began," and which at the time of the examination was "as large as a walnut," oval and elastic, and "lying precisely beneath the arch of the pubis, between the anterior vaginal wall and the urethra, and projecting into the vaginal canal, so as to occlude the opening into the hymen." The tumor had increased with every menstrual period. During the catamenial period preceding its removal, "it had swelled to unwonted dimensions, had protruded from the vulva, whereupon she had picked off two scales from its surface. The tumor had since remained large, protruding, and at the two spots mentioned the tissues had budded out."

The tumor, about as large as a hen's egg, was "found[2] to be exceedingly rich in delicate vessels, not containing blood, anastomosing one with the other in a very intimate manner; the intervening spaces were more or less circular, and contained a fibrillated substance in which were occasional round and innumerable stellate cells. The latter were, in many instances, directly continuous with the vessels previously described, particularly with the smaller ones, which were likewise stellate in their distribution, and apparently differed from the stellate corpuscles only in being more voluminous and having more abundantly nucleated walls." The anastomosing tubes presented the characteristics of lymph-vessels.[3]

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[1] Phil. Med. Times, Sept., 1875, p. 801.

[2] Microscopic examination by Dr. R. H. Fitz.

[3] Vaginal fibromata have been quite frequently observed, a few of which were congenital, but only in a few instances were microscopic examinations made. It is probable, as suggested by Dr. Chadwick, that some of them may have been lymphangioma. See for references the papers by Drs. Bryk and Chadwick, previously referred to.

In this connection the cases of lymphatic tumors[1] involving the absorbent vessels of the breast, become interesting. They are usually found in the "breast of females between the ages of fifteen and thirty-five, and are liable to recur frequently, where there exists comparative emaciation, accompanied with irregular or deficient menstruation, depression of spirits and general debility, and, hence, most frequently occur in suckling and selerotic women, and are always associated with deficient circulation in the womb, manifested by the discharge of an imperfect secretion, or false membrane from its mucous surface."[2] This relation of the menses to tumor developments is more distinctly exhibited in the succeeding case.

Case LXXXII.[3]—Rosina Geng, æt. 32, was of medium height, well proportioned, well nourished, never seriously ill, though of weakly constitution. At the age of 19 was compelled to abandon "service" because of a tumor of the external genitalia, from which after puncture a watery fluid was discharged. She menstruated regularly up to her 25th year, and gave birth to a healthy child in her 26th year. After the lying-in menstruation ceased entirely and the skin of the back began to thicken. The tumor grew rapidly, and in eighteen months had attained the size, when first seen by Hecker, as represented in Fig. 46.

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[1] "These tumors are characterized by a painful, tender, and irritable swelling, varying in size and consisting of several cord-like, indurations, at times disposed in parallel rows, or connected after the manner of an anastomosis. The swelling is always transverse, following the direction of the absorbents towards the axilla, and consists of lymphatic vessels with thickened coats, imbedded in a stratum of condensed cellular tissue. The glands in the axilla, and, more rarely, those below the clavicle, become enlarged. Among the cases reported by Dr. Coley was one, in which the tumor was as large as a walnut, irregular on its surface, tender and painful on pressure, and situated in the upper part of the breast along the course of the absorbents. Every three or four weeks the uterus discharged a kind of false membrane instead of the proper menstrual secretion. The nipple was retracted; bowels relaxed. These tumors are to be distinguished from the chronic mammary tumors described by Sir Astley Cooper, and from the irritable tumor."—James Milman Coley, M.D., London Lancet, vol. i., 1843, p. 579.

[2] Milk secreted from the axilla.—M.S., æt 37. A swelling nearly the size of half a walnut was first observed in the right axilla, the night of her seventh confinement, and continued the same for a month, when it became painful and began to discharge a small quantity of a milky-looking fluid. A month later it had somewhat a doughy feel, was compressible, the covering integument was normal. On pressure a small quantity of milky fluid was discharged, which on microscopic examination presented all the characters of true milk, and seemed to have been secreted from a portion of the mammary gland situated in the axilla. Six months after the first observation the swelling presented the appearances and character as previously described, and the discharge of milk continued.

Hare, Trans. Patholog. Soc., London, vol. xi., p. 304, 1860.

A case somewhat similar is recorded in Dic. des Sci. Medicales, t. xxx., p 397.

[3] Carl W. Hecker. Die Elephantiasis. 1858.

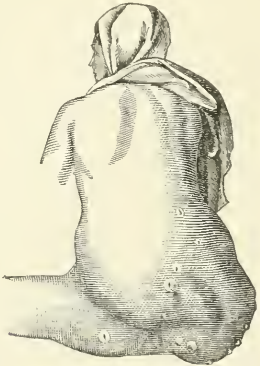

FIG. 46.

The integument was flaccid, dirt fallow, yellowish, and especially from the occiput to the pedicle of the largest tumor much thickened, grayish and traversed by white lines and somewhat excavated spots, like the abdomen of women who had given birth to children, but was movable and could be elevated into large folds. Upon the skin in many places were sixty smaller and larger tumors, many about the size of a cherry, comparable to lipoma angiectodes; others compact like fat tumors; others soft, fluctuating, and containing a serous fluid. The integument of the solid tumor was thickened, but of normal color; that of the others was thinner, of a bluish color. A large, movable soft tumor was located upon the neck; another, of apple size, upon left buttock. The largest one commenced at the seventh cervical vertebra and from both scapulæ, with a pedicle sixteen inches in diameter, which extended down to the first lumbar vertebra, occupying the entire back and drawing up the skin of the anterior and lateral portions of the trunk.[1] It hung over the buttocks, measured longitudinally 2 ft. 2 in. at its base, in circumference 2 ft. 8 in., and just above its lowest portion 3 ft. 4 in. in circumference. After amputation it weighed 31 lbs. The greater part of the tumor felt like a lipoma, but in a few places was soft and fluctuating. The integument was traversed by few vessels, but strongly pigmented, somewhat reddened during fever, and upon its surface were cysts of pea size, and soft tumors filled with serum, like those situated upon other parts. From cracks and fissures a sickening, light yellow fluid dribbles at certain periods, which after standing separates into a thin, lighter, and thick, viscid, gelatinous portion. The quantity usually amounts to four or five pints in twenty-four hours; recurs every four or five weeks, lasting usually four or six days, and is accompanied with fever, lassitude, soreness in the limbs, nausea and vomiting, palpitation, dyspnœa and general malaise. A sound introduced through an opening entered a lardaceous mass supplied with caverns, from which was discharged a fluid rich in albumen, with the addition of several salts, especially chloride of sodium. Towards the lower end the tumor was divided by a deep furrow into a smaller left and a larger lower right half.

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[1] The patient insisted that these tumors were present from her earliest recollection, as prominences of the color of the skin and not as spots.

Pathologico-anatomical examination of the tumor.[1] It lost by drainage, after amputation, of a serous, albuminous fluid several pounds. The microscope showed it to consist of hypertrophic connective tissue, the interstices of which were filled with serum and a firm, white, lardaceous mass. The skin was in some places an inch thick; only a few fat-globules were found. It was very vascular and traversed by thirty-six dilated, elongated and tortuous veins, which did not collapse, but remained patulous and rose more or less over the cut surface. The arteries were dilated, elongated and tortuous, but their coats did not exhibit any textural changes. These vessels traversed the hypertrophic integumentary and cellular tissues in every direction. Beneath the latter the parts did not show the least structural change.

The foregoing examination does not prove the lymphatic nature of the tumor; but the presence of the numerous caverns formed by the greatly expanded connective-tissue interstices filled with a fluid rich in albumen and salts, and the fat masses, go far towards establishing this conclusion. This view derives confirmation from the analogous conditions found in several of the cases previously introduced. In Lücke's case (74) the tumor on the upper lip presented in its interior organization a cavernous trabecular tissue, with meshes filled partly with a coagulum and partly "with a serous fluid containing small cells like lymph corpuscles;" in Reichel's case (76) of congenital "lymphangioma cavernosum cysticum," the hard perineal tumor, which felt like a lipoma, proved on microscopic examination to be a conglomeration of larger and smaller cystoid cavities, with interposed fat and connective tissue. Prof. Waldeyer found in the meshes of the connective tissue, "transparent cysts, communicating one with another and with the lymphatic lacunæ of the connective tissue." The fluid found in these cysts was weakly alkaline, perfectly clear, slightly adhesive, coagulated upon exposure, and contained isolated red blood-disks and a few ameboid corpuscles resembling lymph corpuscles. Upon the interior surface of the cysts lymphatic endothelium appeared in perfect outline; in Hofmokl's case (75) the tumor consisted of caverns communicating with each other by canals. The interstices of the connective tissue mesh-work, which constituted the bulk of the tumor in Gjorgjewic's case, were filled with lymph. The cases (78, 79, and 80) reported by Prof. Bryk also present analogous conditions, but in all these cases the lymphatic nature of the cavernous structures was unmistakable. The case of Hecker exhibits other interesting phenomena; an enormously thickened skin, due to hypertrophied connective tissue, coexisted with a very remarkable and abundant supply of veins, which were greatly dilated, elongated, and tortuous. This extraordinary development of the veins necessarily led to stasis of venous blood, and the fluid which filled to repletion the lymph spaces was probably derived, through transudation, from the venous plexus, and, consequently, represented a fluid poor in corpuscular elements, but comparatively rich in the constituents of blood-serum—hence the very marked proliferation of connective tissue. The "cysts of pea size and soft tumors filled with serum," which studded the surface of the large tumor, were manifestly ampullar formations in open continuity with the widely dilated lymph spaces. The gelatinous coagulum which formed characterized the exudation as an impoverished lymphous fluid. The "lardaceous" infiltration was probably a degenerative process.

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[1] The brothers and sisters of Rosina Geng were healthy. Her parents had been long dead, but it was generally known that their maternal grandfather had upon his back and chest many tumors of about the size of a fist, and many wart-like excrescences upon other parts; that their father had in the later years of his life a large tumor on his left arm, which sometimes broke and discharged a stinking ichor. His brother had a tumor larger than Rosina Geng's upon his back, which hung far down over the buttocks, which rendered walking scarcely possible. This hereditary tendency has appeared in several instances, and is attributed by Hecker to a peculiar diathesis, which is transmitted to offspring.

CASE LXXXIII.[1]—Therese Geng, the bastard child of Rosina Geng, was born with a small tumor upon her back, which had grown to the size of a fist at the age of six. Never menstruated. From her fifteenth year the tumor grew rapidly. At the age of twenty-five she was small, well built, badly nourished, walked badly, and stooped towards the left side. The tumor, measuring 77 ctms. from base to apex, extended from the last dorsal vertebra and hung like a bag below the popliteal space. A pear-shaped lobe, the size of a child's head,

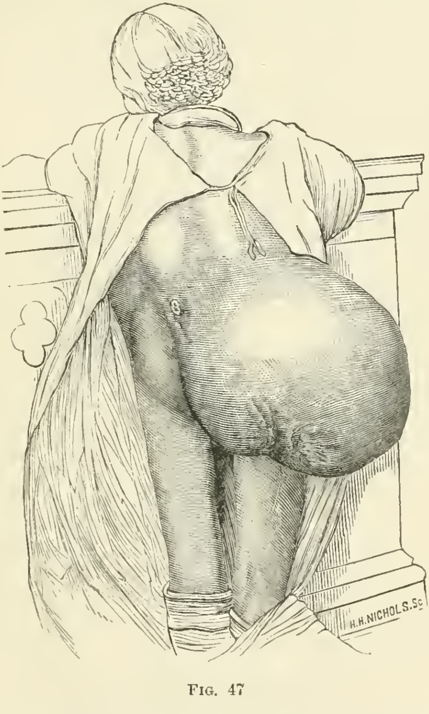

FIG. 47

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[1] Czerny, Archiv für klinische Chirurgie, Vol. XVII., p. 357.

ulcerated at its lower end and discharged ichor, whilst another lobe, somewhat like a cock's comb, was prominent towards the right side. Circumference of the bag-like portion, 38 ctms. The external and anterior side of the right thigh was covered with flat, hemispherical tumors, varying in circumference from the size of a silver dollar to that of a fist. The cutis was firm and thick, loosely attached, but not discolored. See Fig. 47.

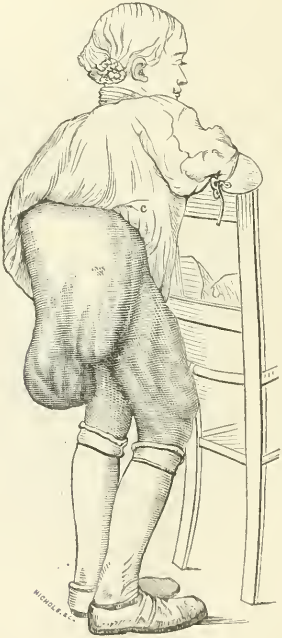

FIG. 48.

In 1871 Prof. Hecker ablated the pear-shaped portion, and when Prof. Czerny took charge of the clinic several months afterwards, the tumor presented the appearance as represented in Fig. 48. The skin was sallow, yellowish, muscular tissue flaccid, subcutaneous tissue rather fatty. The remaining portion of the tumor had increased considerably, and did not present itself as a sac-like elongation of the skin, but was very firm. The skin was firmly adherent, darkly pigmented, somewhat retracted at the seat of the operation, and granulating. Upon the surface of the tumor were several fistulous canals, from which was discharged a thin serum, mixed with pus-flakes. The fluid, often secreted in large quantities, was clear, albuminous, contained lymph corpuscles, coagulated readily and spontaneously. Prof. Czerny made several ineffectual efforts to reduce the tumor. The patient died March, 1873.

Sectio cadaveris. Both pupils equally dilated, hypostatic discolorations upon the back. Towards the left of the median line from the 10th dorsal vertebra to 10 ctms. below the right trochanter, in a longitudinal extent of 45 ctms., the skin continued in a solid tumor, depending downwards. At the base of the tumor, 101 ctms. in circumference, the skin could be lifted up in folds. At the greatest height, however, the skin was firmly attached. Surface brown, and covered by numerous, irregularly situated, white, smooth, cicatricial spots; upon the greatest convexity several portions were edematous, tensely stretched; the epidermis of these portions can be raised with ease. Upon pressure a moderate quantity of serum was discharged from a few openings. Through these openings a sound could be passed for several inches into a broken-down tissue.

The rest of the body showed sparsely, softly elastic protuberances, of lentil to walnut size, over which the skin was thinned. Upon section they presented a reddish gray granulation tissue. The tumor, as large as two fists, over the trochanter was due to pus-collection in the bursa mucosa. An incision into the left temporal muscle resulted in the discharge of pus. The temporal plane of the parietal bone, the greater wing of sphenoid and a part of the squamous portion of the temporal bone, were rough, uneven, and upon the edges surrounded by a very vascular osteophytic wall. The diploë of this portion contained vessels filled with blood. Upon the inner side of the rather thin skull, corresponding to the site of the division of the middle meningeal artery, was an abscess as large as a walnut. Meningeal artery was pervious; dura mater on its external side, corresponding to the abscess, covered by thick granulations; inner surface smooth; cortical surface of brain firm, moist, and reddish gray. Moderate quantity of clear serum in the subarachnoid space and in the ventricles.

The right arteria fossæ Silvii was plugged by a solid reddish thrombus, which extended into the three principal branches and could be traced into the internal carotid as far as the bifurcation.

Thyroid gland as large as a fist, filled with small cysts containing colloid.

The right lung attached to the thoracic wall. The middle lobe contained an old, encapsulated pus focus. Subpleural ecchymoses at base of left lung.

Upon the convex surface and partly in the substance of the liver were several small encysted abscesses. Spleen attached to diaphragm and contained several old pus-foci. Right kidney contained an embolic focus; ovaries smooth; uterus virginal.

After the intestines had been pushed aside, were discovered solid bundles of pad-like, yellowish white tumors, covered by the mesentery and parietal peritoneum, and lying upon the quadratus lumborum. These tumors were enlargements of the anterior branches of the right lumbar nerve network. These nerve-tumors are represented in the figure below (Fig. 49).

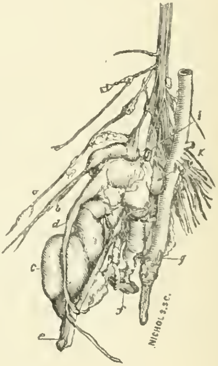

Fig. 49.—*a*, *n*, Ileo-hypogastrium; *b*. ileo-inguinalis; *c*, genito-cruralis. The terminal portion of this nerve, in the illustration lying alongside of the cruralis, crossed to the latter and took its course through the inguinal canal. *d*, *n*, Cutaneus ext. Its situation in the figure is wrong. It crossed the genito-cruralis and passed outward to the anterior superior spine. *e*, *n*, Cruralis; *g* aorta (place of division into iliaca); *i* and *k* neuromata which were within the spinal canal.

The lumbar nerve (*a*) was twice the size of the opposite one. The 2nd and 5th showed, at the place where the intervertebral ganglion should be, a pad-like, tortuous thickening, which in the majority of the anterior branches of the lumbar network reached as far as the nerves are contained in the abdominal cavity; of the ganglionic swellings two were within the spinal canal—ganglion *i* within the sac of the spinalis, whilst *k* had grown to the outside of the latter. The latter, on account of its size (4 ctms. long, 2½ ctms. thick), had flattened the cauda equina, without, however, having disturbed the anatomical character, or the function of its nerves. The intumescences of the ileo-inguinal (*b*) and of the genito-cruralis (*c*) were partly within the intervertebral foramina.

A freshly cut surface of the large tumor looked jelly-like, very moist, yellowish gray, very vascular, and tinged red. In places it was marbled and was of the consistence of the flesh of the sweet-water muscle. In a direction perpendicular to the surface it could be easily torn. Fine fibrillæ, similar to those found in many lymphomata and spindle-cell sarcomata, could be split off. Upon exposure of the cut or torn surface to the air it turned pale pink, like lymph-gland tissue. In tearing the tumor were frequently met slit-like caverns, filled with a clear, readily coagulating fluid. The same fluid exuded from the cut surfaces upon the slightest pressure.

The mass of the tumor was imbedded between the cutis and fascia, and forced itself between the single fat-lobes, so that a belt of fat-lobes ran through the middle of the cut surface. The development of vessels was as remarkable as in the patient's mother (case of Hecker). The veins as large as the little finger were supplied with valves, and in their smaller ramifications possessed a sheath of lymphoid tissue. Partly running parallel with, partly crossing the larger blood-vessels, were found—thickly crowded in many places, more sparsely scattered at others—solid cords of medullary whiteness, of the thickness of a crow- to that of a goose-quill, which showed many bead-like swellings, and which were connected with the dorsal branches of the lumbar and sacral nerves.

The primary changes which led to the formation of the colossal tumor were best observed on the marginal portions. Along the larger vessels which ran between the fat-lobules of the subcutaneous tissue " there was an augmentation of the cells accompanying the adventitia, which partly possessed the form of migration cells, and partly the form of embryonal connective-tissue cells." This cell increase accompanied the smaller branches imbedded in the adipose layers and those which penetrated the fat-lobules and surrounded the separate fat-cells, but not those which penetrated into the cutis proper. Embryonal connective tissue was developed around the sudoriparous glands and in the adjacent fat-lobules. The more deeply-seated fat-lobules were forced apart by the cell new formation, which had penetrated in some instances between the separate fat-cells.

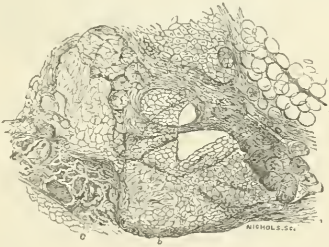

FIG. 50.—*b*, Caverns lined with endothelium. *c*, Juice-tracks in connective-tissue trabeculæ.

The covering epidermis was not thickened, the cells of the rete malpighii were supplied with brown granular pigment. The corium was thinned and closely united to the mass of the tumor. The principal bulk of the latter consisted of connective tissue such as is found in the subcutaneous cellular tissue of embryonal life, or in myxomata; it was, however, in some places changed into solid, tendinous connective tissue, in others into adipose tissue, but always retained the laminous structure, so that along the vessels it could be split off in lamina which contained caverns between the fibres. A beautiful endothelium lined these caverns. See Fig. 50.

By a piercing injection a blue injection fluid was forced into the channel system of caverns, which was abundantly developed below the cutis and finally terminated in characteristically pronounced lymph-vessels, which were traced as far as the centre of the tumor.

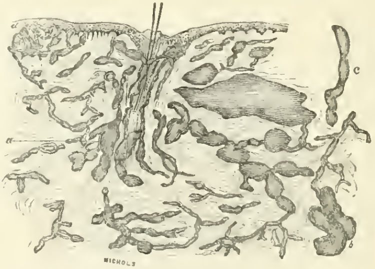

Fig. 51.—Lymph-vessels injected from greatest convexity of tumor. *a*, Lymph-sac around sebaceous gland. *b*. Sweat-gland convolution. *c*, Sweat-gland efferent duct. *d*, Lymph-vessel of papillæ.

The hair-bulbs and sebaceous follicles were sparsely present and atrophied; the efferent ducts of the sudoriparous glands were much elongated, the convolutions frequently lying 6 to 8 mm. below the surface. The glands were frequently drawn out of place. The sebaceous glands were surrounded by sac-like cavities (Fig. 51) which united towards the hair-bulb and emptied into lymph-vessels which accompanied the hair-bulb to the surface of the cutis, where they surrounded the bulb in a wreath-like manner and afterwards passed off into the superficial lymphatic network of the cutis, which frequently send centre lymph-vessels into single papillæ. From the bottom of the sac occasionally a lymph-vessel took its origin and ran towards the subcutaneous tissue. There were also found lymph-sinuses (Fig. 51, *b*) surrounding sudoriparous gland convolutions, and lymph-sheaths around an efferent duct (*c*), yet within the cutis. In a general view of the cutis covering the tumor a superficial and deeper layer of lymph-vessels could be distinguished. The superficial layer was composed of smaller vessels, which anastomosed in a narrow network and gave off a central lymph-vessel, rarely a loop (*d*), to many papillæ. This layer was united by many branches with the deeper layer, which consisted of wider sinuous vessels, between which the sebaceous glands were situated. In the vicinity of the points of puncture the tensely filled lymph-vessels were covered with closely placed shorter and longer points, which Czerny regarded as the beginnings of the entering juice-tracks. It was further demonstrated that the juice-track system existed in the tissues of the tumor and were connected with large cavities forming a widespread system of canals.

In this case, which Czerny entitled "elephantiasis arabum congenita with plexiform neuromata," the tumor originated in a hyperplasia of the subcutaneous connective tissue, but in an embryonal form. The fat-cells were developed along the blood-vessels, and, in consequence of the close relation of the adipose with the connective tissue, it exhibits in some places new formations of connective tissue, and in other places fat-formations. As a whole the tumor characterized itself as a lymphoma, and presented in its interior structure conditions analogous to those found in several of the preceding cases.

Czerny claims to have found in the integumentary glands the periacinous lymph-caverns which Ludwig and Thomsa demonstrated for the seminal tubuli, Gianazzi for the salivary glands, and Boll for the lachrymal glands, and to have established a communication between the periacinous lymph-caverns of the sebaceous glands with the lymph-spaces of the skin. In a somewhat macerated cadaver he succeeded in penetrating with an injection from the periacinous caverns of the sebaceous glands the lymph-spaces of the skin, elevating the epidermis in vesicles. "The presence of these lymph-sheaths," adds Czerny, "around the sebaceous glands, explains why in many cases of epithelial carcinoma the masses of epithelium which take their origin from proliferating sebaceous glands grow at once into the lymph-vessels and upon section imitate their ramifications so exquisitely." Bizzozero, in a case of epithelial cancer of the cheek, injected the caverns around the cell-cylinders. What relation the continuity of these lymph-sinuses around the sebaceous gland follicles with the lymph-spaces of the integument may bear to the development of pachydermia lymphangiectatica, cannot be conjectured, but it may not be improbable that the return of the lymph is obstructed by the contraction of the muscular fibres.

The combination of this tumor with the nerve-tumors, which has not probably been observed to the same extent, is peculiarly interesting. It may have been merely a coincidence. Czerny regarded the neuromata as mainly consisting of connective tissue, in which ganglion-cells and marrow-containing fibres were disseminated, and suggests that the hyperplastic process may have extended into the neurolemma of the nerves, or that the affection may have been propagated along the lymph-sheaths of the nerves.

The cavities in the tumor must be designated cavernous lymph-spaces, for they were lined with an endothelium and were in communication with the tubular lymph-vessels; hence, its proper classification is among the cavernous lymphangiomata. The literature of the subject has supplied numerous cases of ectasia of lymph channels, but the instances of simple and cavernous lymphangiomata are comparatively rare. The cases observed by Amussat, Nélaton, Drinkard, Trélat, Petters and others, of ectasia, cannot properly be classed among the lymphangiomata, nor can the case of lymphangioma adnatum (75) observed by Hofmokl, in the absence of an anatomical examination, be certainly enumerated in this group, notwithstanding the evacuated fluid contained albumen, fibrin, globulin in a small quantity, and the salts of the blood-serum. Virchow was the first to invite attention to the cavernous structure of macroglossia, and the cases of hypertrophic tongue and macrochilia described by him and Billroth must be accepted as typical illustrations of the cavernous structures of the lymph apparatus. Virchow is undecided whether the caverns proceed from a progressive proliferation of the connective-tissue cells, or whether the lymph-vessels and connective-tissue corpuscles are affected simultaneously. Billroth assumes the connection of the cavernous spaces with the lymph-vessels, and that the cavernous degeneration originates in the connective-tissue cells, the "multiplication of their nuclei either producing a solidifying connective-tissue substance, through which the fibrous form of macroglossia originates, or else the interstitial substance generated by the cells is fluid, which leads to the origin of the cavernous form." Maas found in three of four cases of hypertrophy of the tongue a cavernous tissue, but the caverns contained red blood-corpuscles and fibrin-coagula, and he concluded the caverns were partly thin-walled veins and partly "thickened arteries." Lymph-spaces were not demonstrated in the cases of Fischer or Waldeyer. Others have found only hyperplasia of the tissue composing the tongue, and others again have confirmed the observations of Maas. Gies demonstrated hyperplasia of connective tissue with abundant infiltration of round cells, and tissue-spaces containing coagulated lymph and lined by a distinct endothelium. Arnstein, in a case of macroglossia, observed considerable enlargement of the glossal papillæ, and in the parenchyma distinguished two kinds of caverns, "one round and filled with red blood-corpuscles and fibrin threads, the other irregular, sinuous, with granular contents and scattered lymphoid cells." The former were probably ectatic blood-vessels, as observed in the cases of Maas, and the latter dilated lymph channels or spaces. In Arnstein's case the connective tissue, as in the case of Gies, was infiltrated with numerous round cells, which were grouped in forms resembling lymph-follicles. This adenoid structure he believed developed from the lymph-cells.

The succeeding case of "lymphangioma, with general enlargement of the limb and elephantiasis of the toes," reported by Sydney Jones,[1] though not of congenital origin, presents additional opportunities for the study of these developments, and offers an explanation of the phenomena observed by Maas in three cases of hypertrophy of the tongue, which he, perhaps, improperly ascribed to the cavernous expansion of thin-walled blood-capillaries.

CASE LXXXIV. A laborer, æt. 31, admitted to the hospital in 1874, had been seized, seven years before, with a painless swelling of the right thigh, consisting of knotty enlargements situated on the back and inner surfaces of the thigh and between the buttock and thigh. These swellings, at the time of admission, looked like varicose veins, varied in size from a pin's head to a vessel of about the diameter of one's little finger; some were pinkish and some white, with fluid contents. Most of them emptied on pressure, to refill on removal of the pressure. They often discharged spontaneously a white, milky fluid, sometimes as much as one or two quarts a day, at intervals varying from a week to a month. See Fig. 52.

The skin on the toes and lower third of the thigh was tuberculated and brawny. At other places were tuberculated prominences, from some of which a milky fluid was occasionally discharged.

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[1] St. Thomas' Hosp. Rept. New series. Vol. V., p. 295.

The patient stated that when he had been free from any discharge for some time, hard, painful lumps appeared in the right inguinal region. In the left groin several enlarged glands could be felt.

Dilated vessels of the same character could be traced in the scrotum, involving the right side, but encroaching beyond the median line, showing white prominences, not larger than a pin's head, on the left side.

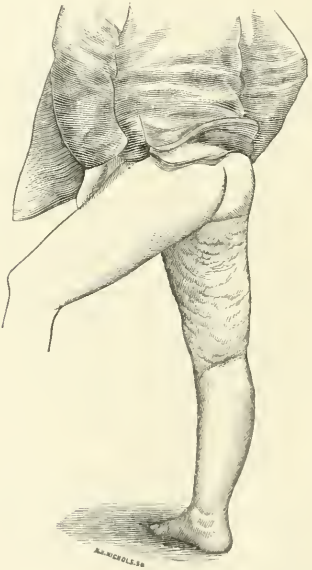

Fig. 52.

The whole of the right limb was much larger than the left, and always greatly increased when the patient was walking, or the limb hanging. It constantly increased during his stay in the hospital, and was several times attacked with an erysipelatous inflammation, accompanied with considerable constitutional disturbance, pain, redness, and marked engorgement of the lymphatic vessels. These attacks were greatly relieved by a copious discharge of milky fluid.

Analysis of the discharge by Dr. Bernays showed a vast number of minute granules giving the milky character, lymph-corpuscles, and a few red blood-corpuscles. It contained from 1.56 to 4.27 per cent. of fat, and about 6.43 per cent. of albumen, coagulated firmly and was inodorous.

Mr. Charles Stewart submitted two portions of the skin to a microscopic examination. One, which was removed from the back of the right thigh, formed the external wall of a semi-transparent bulla. This specimen exhibited "large, freely communicating chambers lined by a continuous layer of endothelium, presenting considerable variety of forms in different parts. The chambers were traversed in numerous places by trabeculæ; the remains of the skin which formed the outer walls of these chambers appeared much thinned, with probable flattening of the papillæ." There can be but little doubt, adds Mr. Stewart, that these chambers were greatly dilated lymphatic vessels.

Vertical and horizontal sections of the brawny, congested and nodular skin removed from the dorsal surface of the toe "showed great hypertrophy of the connective tissue of the cutis with elongation of the cuticular portion of the sudoriparous ducts; but the most remarkable feature was, besides the presence of large, thinned walled canals (lymphatics) in the deeper portion of the tissue, the existence of large spaces in the papillæ, often traversed by trabeculæ and lined with proliferating endothelium. They in some places freely communicated with subjacent blood-vessels, probably veins, and by their distention had produced great condensation of the surrounding connective tissue of the papillæ and compression of the cells of the neighboring rete mucosum. Normal blood-vessels could be seen running by the sides of the spaces, especially in those sections taken in a horizontal direction from the skin."

"The interior of the dilated chambers in the papillæ being often traversed by trabeculæ, and the presence of normal blood-vessels by their sides, would lead one to suppose that they were dilated lymphatics or lymph-spaces which had become continuous with a neighboring blood-vessel by rupture, the blood during life rather regurgitating into the lymphatics than flowing directly into them."

"But the direct continuity of the walls of the blood-vessels and space might lead one to suppose the blood-vessel itself by dilatation forms the space; if so, the trabeculæ would be the connective tissue between the capillary loops."

"In addition to the above there were also occasionally beneath the epidermis small circumscribed areas traversed by fine fibres and cells; these were probably produced by local distention of the lymph-spaces compressing and producing the removal of the greater part of the bundles of connective tissue, leaving only fine fibres in their place. Minute spaces filled with blood were not infrequent at different levels between the cells of the epidermis, having escaped from the distended chambers beneath."

The appearances found in the vertical section of the outer wall of the "semi-transparent bulla" are similar to, though more exaggerated than, those observed in a section of the integumental covering of the vesicles present in Case 1. In the latter many of the spaces (see Fig. 8) communicated, but an endothelial lining was not recognized. Stewart also recognized lymph-spaces in the papillæ of that portion of the integument which was congested, which corresponds closely with the conditions described by Teichmann (see Fig. 37) and Odenius. And the fact that such large lymph-spaces were only observed in the papillæ of those parts of the integument in which inflammatory changes had taken place, and not in the papillæ of the covering integument of the bulla, confirms the theory of Odenius, that when found in the cutaneous papillæ they are newly-formed lymph channels.

The additional observation, by Stewart, of intercommunication between the spaces found in the papillæ and subjacent veins may afford an explanation of the origin of the pigment deposits, which have been so frequently found in cases involving dilatation of lymph channels. So, likewise, may the collections of blood, occasionally present, be accounted for.

Winiwarter[1] observed a case of congenital macroglossia combined with hydroma cysticum colli congenita, in a boy 14 months of age, who died soon after the operation upon the tongue.[2] The tumor upon the neck consisted of several large cysts, which penetrated between the muscles of the floor of the oral cavity, and passed into the cavernous tissue of the remaining stump of the tongue.[3] The tongue

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[1] Langenbeck's Archiv f. klin. Chir., Vol. XVI., p. 655, cited by Weichselbaum.

[2] Tizzoni and Parona have published a résumé of all the cases of lipoma linguæ in the Annali Universali di Medicina e di Chirurgia for March, 1877. Also Month. Abst., Sept., 1877, p. 417.

[3] Prof. Michel, of Nancy, in a report of seven cases of ranula, denies that there was in either of the cases any connection between the cysts and the salivary canals. In all the cases the cysts "had originated in the areolæ of the connective tissue about the frenum of the tongue." Gaz. Hebdomad., Nov. 16, 1877. Also Monthly Abst., Sept., 1877, p. 416.

Talko reports a case of microphthalmus coexisting with a "congenital serous cyst of the orbit." In his summary of six cases he says that such itself contained variously large and variously formed caverns, which were filled with granular coagula, or with blood-corpuscles and lymph-cells; in several places the connective tissue was infiltrated with new-formed cells. Winiwarter believed that a portion of the caverns originated from dilatation of pre-existing lymph-vessels, but that a majority were developed by division of the connective-tissue cells, which brought about a new formation of round cells, which grouped in masses as in Arnstein's case, and became encapsulated with connective-tissue fibres. In the centre of the follicular masses disintegration of the cells takes place, progressing towards the periphery and thus leading to the formation of a cavern, which gradually is filled with a serous fluid, still containing the cell remains as a finely granular mass.

Weichselbaum suggests another mode of development of the caverns. The follicular proliferations become saturated with serum, "their cells are forced apart and in part disintegrate, whilst the supportive tissue with its mesh-cavities remains; finally this also disappears, and the small mesh-cavities unite together into larger caverns." Czerny, who examined the tumor removed from the thigh of the patient of Gjorgjewic, reached the conclusion that the cavernous spaces were formed from the granulation tissue which developed around the lymph-vessels. Volkmann traced the caverns of the hypertrophic tongue to a degeneration of the tongue papillæ.

Cavernous lymphangioma are identical in structure with the cavernous blood-tumors, hence the inference is clear that the developmental process is the same. Various theories concerning the origin of cavernous tumors have been suggested (Rokitansky, Virchow, Rindfleisch, and others), but the question remains unsettled. Rindfleisch (*Text-book Path. Anat.*, p. 144) asserts that every tissue supplied with blood-vessels can be transformed into cavernous tissue, the only pre-requisite being

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"cysts are commonly covered with the conjunctiva," and "are usually filled with yellow serous fluid, rich in albumen," Zehender's Monatsblätter, Apr., 1877; also Month. Abst., Sept., 1877, p. 415.

Tizzoni and Parona have also reported a case of fibro-lipoma of the spermatic cord. Microscopic examination of the extirpated tumor "showed ordinary adipose tissue with fibrous septa and abundant vessels and nerves." The "vessels were affected with obliterative inflammation, being in some places completely occluded with proliferated epithelium. In the sheaths of the nerves, also, they noticed a dilatation of the lympathic spaces, together with a thickening of the sheath and infiltration of the same with leucocytes." Ibid., p. 419.

the presence of germinal tissue, which, by the cavernous metamorphosis (loc. cit., p. 145), is converted along the vascular walls into spindle-cells and fibrous connective tissue, by which "a retraction vertical to the axis of the parenchymatous trabeculæ" and dilatation of the vascular tract are brought about. This excludes the hypothesis of new formation of blood-vessels or caverns, upon which Virchow insisted. All these hypotheses (Rokitansky's excepted) agree that the new formation of round-cell tissue is intimately concerned in the origin of caverns.

Billroth, Lücke, Koester, and others have classed the congenital cystic hydroma of the neck among the cavernous lymphangiomata. They consist (Weichselbaum) of a connective-tissue trabeculæ, within whose branched and intercommunicating caverns a serous fluid is contained. It would unnecessarily lengthen this memoir to reproduce the numerous cases, and I must therefore be content with a simple recital of the more characteristic phenomena, for which I am indebted to Wernher,[1] who collected and analyzed fifteen cases. This form of congenital cavernous formations occurs most frequently among the female, has been usually observed in immature children, and generally complicated with other malformations. The tumor always (Steinwirker) has its principal seat at the lower portion of the occiput and the upper part of the neck, is spheroidal, with a smooth surface, and divided in the median line of the body by a furrow into two symmetrical halves. In some cases the tumor extended from the ridge of the occipital bone to the middle of the scapulæ, and anteriorly to the ears. In one case it extended forward on both sides, until its two halves nearly touched each other in front. Fluctuation is very constantly present in some part. In all cervical hydromata (Steinwirker) the integument of the entire body was infiltrated with serum, and in one case the œdematous skin was formed into folds, beneath which were many cysts filled with a clear fluid. They are usually composed of two symmetrical cysts, divided into smaller compartments. The walls of the cysts are generally very delicate and transparent, but occasionally more firm and fibrous, resembling the pericardium. The cysts are frequently separated. In Wernher's case, the walls consisted of distinct fibre-bundles, and in the fluid of the cysts floated many epithelial cells.

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[1] Congen. Cystic Hydromata, Giessen, 1843.

In cystic hydroma the cavities present simple cystic conglomerations (Steinwirker), or empty into each other. Wernher found epithelium in the cysts; Steinwirker demonstrated an epithelial lining of their walls, which are formed of condensed connective tissue. Both investigators found serum in the mesh-cavities. Steinwirker insists that cystic hydroma, like congenital elephantiasis, find their origin in congenital dilatation of lymph-vessels, which conclusion is corroborated by the discovery of epithelium in the cysts containing serum and the presence of lymph channels in the connective tissue. If the dilatation of the lymph channels be only moderate, the cysts will be small, but in proportion to the degree of the ectasia will the cysts increase. With enlargement of the cysts fluctuation becomes more or less recognizable. Koester demonstrated in a case of cystic hydroma of the neck the general communication of the closely-crowded caverns with each other. He also proved the "direct transition of the cysts into ampullary canals and spaces, and recognized the connection of the latter with the sinuses of lymph-glands."

Cystic hydroma of the neck must therefore be regarded as lymphangiectasiæ, presented either in the form of circumscribed tumors or diffuse developments. In fact, the diffuse character of the affection pertains to all the cases, for Wernher asserts that "in all cases the integument of the whole body was dropsically infiltrated, in many cases so much so that the large tumor of the neck barely protruded." Accepting then the diffuse rather than the circumscribed nature of the affection, the two forms must be regarded as analogous diseases, differing only in the size of the existing cysts, and both forms must be classed among the congenital lymphangiectasiæ. Steinwirker suggests that both forms are advanced stages of congenital elephantiasis, produced by enlargement and growth of existing cystic dilatations. He also asserts that "only the colossal hyperplasia or dilatation of the lymph-vessels distinguishes lymphangiectasiæ congenitæ from elephantiasis lymphangiectodes, in which the hyperplasia of the connective tissue, although the development of the lymph-vessels is also excessive, still occupies a position predominant in a manner similar to that belonging to acquired elephantiasis."

The cases of Steinwirker (No. 6), Meckel (No. 7), and of Jacobi (No. 12½), supply illustrations of this class of cases. The careful dissection and microscopic examination by Steinwirker established the lymphatic nature of the developments in his case, and justify its classification in the same category with congenital macroglossia, as described by Virchow; the latter exhibiting the circumscribed form of congenital lymphangiectasiæ, the former the diffuse variety.

The succeeding case (85) of chylangioma cavernosum presents another variety of cavernous lymphangiomata, which is entirely unique in its mode of origin. Weichselbaum has reported a case under the same title (see Case 50, *N. O. Med. and Surg. Jour.*), but his was a tumor of the mesentery, caused by occlusion of the chyle-vessels, in which a cavernous expansion of the lymph channels had ensued. I reproduce without comment the case in full.

CASE LXXXV.[1]—Jane L., daughter of a laborer, who lives in rather poor circumstances, was born April 20, 1876, the seventh child of a feeble mother, who, though she wore an aged look at an early period, was said to be healthy. The other children all died soon after birth, or else in early infancy. Immediately after her birth, mother and nurse were struck by the unusually large abdomen of the child; a physician was called in and stated that the child would hardly live, because it had a tumor in the abdominal cavity. Yet, in spite of her decrepit appearance, the child rallied, took the breast properly, and developed, although very slowly. The size of the abdomen, however, increased steadily, although with the exception of a tendency to constipation, which had to be overcome by frequent injections, no real symptoms of disease were noticeable. It was only at the age of four months that the abdomen had attained a size to interfere with respiration; the child vomited frequently whenever she had nursed somewhat rapidly; the water injections failed, and senna was given repeatedly; yet evacuations remained retarded, and the intestines distended by gases, by which respiration was still more impeded. First seen in dispensary, August 22, 1876, æt. four months. Status: body feeble; muscles but little developed; face somewhat cyanotic; thorax in its lower circumference strongly expanded; abdomen exceedingly enlarged (65 ctms. in circumference), tense, drummy, but not quite symmetrical. In spite of the colossal expansion there is distinct stronger bulging of right hypochondrium, passing without sharply defined limits into the surrounding region. Palpation out of question on account of tension of abdominal walls. Percussion gave exquisite tympanitic sound over entire anterior region; decided dulness in lateral portions, changing its level when the child was placed upon one side or the other. The exact limits of the latter could not then be made out; only this much was certain, that there must be free fluid in the cavity. The cause of this hydrops could not be demonstrated. Lower extremities not edematous; no albuminuria. The pressing indication was paracentesis, in order to relieve difficulty of breathing. An exploring trocar was passed into the left epigastrium at a perfectly dull spot, and after removal of the stylet, to the surprise of all present, there was evacuated in a large jet a fluid looking exactly like milk. The resemblance was all that could be imagined—the same color, the same consistency, nay, even the same odor like fresh milk. Slowly (on account of the small canula) a quantity of about three litres was discharged; I then removed the trocar before complete evacuation of the abdomen, in order not to lower pressure too suddenly. Although the abdomen had become much smaller, yet the tympanitic intestines rendered examination difficult. There still was prominence of right hypochondrium, and corresponding with it dulness extending from the hepatic dulness, from about the medial edge of the right lobe, and passing across the edge of the liver obliquely downward, where it merges into the dulness due to yet remaining fluid. It does not change its position in the upper portion upon assumption of the lateral posture. At this place there is felt upon deep palpation a tumor composed of several somewhat movable portions, apparently attached to the spinal column behind, and in consistency corresponding to a flaccid cyst or a conglomeration of such cysts. Fluctuation cannot be shown with certainty. An exact definition from the anterior edge of the liver is possible; whether the tumor is connected with the lower surface of the liver cannot be decided; it is not grown to the abdominal walls, and respiration does not displace it as a whole. No further revelations could be obtained.

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[1] Winiwarter. Jahrbuch der Kinderheilkunde, etc., Vol. XI., Nos. 2 & 3, 1877, p. 196.

Above all, the milk-like fluid engaged our attention. It had a weakly saline taste; did not coagulate upon standing, but deposited a thick layer upon the surface, as milk deposits cream. The microscope showed no formation developments, with the exception of sparse cells, analogous to milk-globules. The idea lying next was to regard this fat-emulsion, for such it was, as pure chyle, and this hypothesis was confirmed by the chemical analysis made by Prof. Ludwig with great exactness, the results of which I will present farther on, as they were furnished by Prof. Ludwig.

This fluid being looked upon as chyle, the question now arose, how does it get into the abdominal cavity, and what is its connection with the palpable tumor? Before entering upon the diagnosis, I will briefly furnish the further data of the case up to date (February 12, 1877), for the child still lives in a condition entirely unchanged.

Paracentesis had no local disturbing influence, and was followed by decided general improvement; the child again began to take food (she receives, besides the mother's milk, a little broth); respiration became free; vomiting, constipation, etc., disappeared; but the fluid reaccumulated rapidly, necessitating a second tapping on September 12, 1876, by which, as well as by all those following it, the same fluid was evacuated to the amount of two to three litres at each operation. Tapping repeated November 18, December 19, and January 16, 1877; in the intervals the child sometimes suffered from diarrhea, bronchitis, vomiting, etc., yet remained in a general fair condition of nutrition, though very slowly increased in size. Always felt worst before tapping; the latter always met an indicatio vitalis, because by the distention of the abdomen all reception of food was rendered impossible; after tapping, rapid recuperation. Upon the two last occasions I used (always in the left hypogastrium) a larger trocar, and emptied the cavity nearly completely. We now were able to recognize the tumor and its composition by several soft, flaccid pieces. Point of origin remained unsettled.

The chyle-fluid can only reach the abdominal cavity in two ways: 1st. By transudation; 2d. By solution of continuity of a larger chyle vessel. Cases are shown in which, after plugging or compression of the thoracic duct, a milky fluid was found in the pleural and in the abdominal cavities, a phenomenon of stasis, the explanation of which affords no difficulties. In no case, however, were such immense quantities of milk-like fluid found, nor was there observed in these cases such a constantly continuing and rapid accumulation; on the contrary, the results of the autopsy led to the conclusion that the transudation of chyle from lymph-vessels distended by stasis decreased in time, and for the simple reason that the lymph-vessels became impermeable. The milky fluid in them becomes inspissated into a cheese-pulp when efflux is insufficient, which gradually fills entirely the dilated vessels, and thus renders reception of new lymph impossible. In the free transudation also there were found precipitates, which led to the conclusion of the existence of a change in chemical composition. In the case under discussion transudation is indeed possible, if we assume that some obstacle prevents the flow of chyle from the entire intestinal track. It is difficult to determine in what this obstacle consists. It is most plausible to look upon the tumor as the obstructing agent. As to the point of origin of the tumor, two opinions may be held. It either had developed from the right kidney, or it proceeded from the retro peritoneal lymph-glands. I thought of hydronephrosis, of carcinoma of the kidney, of hyperplasia of lymph-glands, of everything before I was able to more accurately palpate the tumor. But the more I thought of the matter, the more I reached the conclusion that the tumor was not cause, but effect of the chyle stasis, and I finally formed the following hypothesis: there exists an obstacle in the discharge of chyle from the abdominal cavity into the thoracic duct. The latter evidently performs its functions, because there exists no other visible phenomenon of stasis. The obstacle is congenital; as to its nature, I cannot express even a supposition. Now, at the root of the mesentery, there have been formed, probably out of the large chyle vessels, cystic cavities (evidently in intra-uterine life already), entirely similar to those met with in hygroma colli cysticum and in macroglossia. How easily such cyst-formation from the lymph-vessels of the peritoneum is brought about has been proved, among others, by Wegner's experiments. He injected air into the peritoneal cavity of rabbits, so that they were blown up, so to speak, and continued this for weeks and months. The air was resorbed in greater part. Upon section of the animals, which had remained perfectly healthy, there were regularly found, at the root of the mesentery, cyst-like vesicles of nut-size, filled with air, and which, as could be proved by the lymph-vessel endothelium upon their walls, were nothing less than cystic dilated lymph-vessels. This cystic tumor in our case is not filled with air, but with pure chyle, for the simple reason that it is fed from the lymph-system of the intestine, *i.e.*, directly by the products of nutritive absorption. The matter remained up to a certain point of time, which at present cannot be determined, thus: that there existed in the abdomen a large cystic tumor, but no free fluid. Finally, one of the cysts broke, probably before birth, the fluid poured into the peritoneal cavity, and this communication exists at present. Only by these abnormal conditions can we explain how chyle formation proceeds entirely without hinderance, and that stasis has not already led to inspissation of chyle and to obstruction of resorption from the side of the intestine. Whatever is absorbed from the alimentary canal passes into the abdominal cavity. Now it would be supposed that this enormous loss of nutritive material would lead to very rapid inanition, and that the child must perish in a short time. That this does not happen, that the child lives, although *per se* it takes but little, and loses two litres of chyle every second month, is explained by the conditions of resorption of the peritoneum. The peritoneal cavity represents a large absorbing apparatus, whose capacity by far exceeds all conception. The direct road to the blood being denied to the chyle, the child can only be nourished by such portions of chyle as are resorbed by the peritoneum. This quantity is probably very considerable, as the fluid in the abdomen is under a high degree of pressure. The thoracic duct being assumed as obstructed, yet a sufficient number of other roads remained by which a sort of collateral chyle-circulation could be developed; especially the centrum tendineum of the diaphragm, the lymph-vessels of the parietal walls of the peritoneum, finally resorption upon the part of the blood-vessels. Thus it is explained, that in spite of losses of chyle the child was living, and has continued to develop. The communication of the chyle cyst with the peritoneal cavity is of great importance in this respect, because it alone renders possible the continuance of work of the entire nutritive and absorbent apparatus, although the work is done at a loss. If we consider that a child of the age of our patient takes up in twenty-four hours about two litres of milk (maximum), and that probably all that is absorbed finds its way into the peritoneal cavity; that furthermore the quantity of solids in the chyle evacuated is approximately as large as that contained in the milk, we can form some estimate what proportionately small fraction of the chyle formed in twenty-four hours cannot be overcome by the resorption of the peritoneal surface, and remains in the peritoneal cavity. For only in the space of a month the quantity of fluid in the cavity reaches to two litres—*i.e.*, as much as is sent to the intestine in twenty-four hours. It is self-evident that this calculation is not exact, but it suffices to form a conception. Immediately after tapping absorption indeed must be somewhat diminished; there may even occur a transudation, because the sudden release to intra-abdominal pressure is calculated to produce hyperemia ex vacuo; afterwards, *per contra*, resorptive activity is again favored by the facilitated mobility of the diaphragm. How long the mechanism will continue to work in this manner, *i.e.*, how long the child will live under these conditions, cannot be exactly determined. Spontaneous cure can hardly be expected; whether surgical interference might improve the condition, I will discuss presently. When I first examined the patient after tapping, the case appeared unique. There have indeed repeatedly been observed effusion of chyle into the large serous cavities, also into cavernous lymphangiomata, vide Gjorgjewic, Quincke, Weichselbaum; but nowhere was found a similar coexistence of an abdominal wall composed of lymph-cysts of such size, and hydrops chylosus as in the present case. A few weeks after I found an entirely analogous case in Schmidt's Jahrb. (Wilhelm's).—See Case 42, *N. O. Med. and Surg. Jour.*

W.'s case proves what might be doubtful *a priori*, viz.: that a condition of this kind need not immediately lead to death. Therefore, in my case there existed no vital indication to operate. As, however, the parents asked again and again whether nothing could be done to cure the child, I commenced to meditate upon operative interference and its result. Here a circumstance existed which must offer an insurmountable obstacle—the uncertainty by what the stasis was caused. Even if by opening the abdomen in the linea alba, the chyle-tumor could have been drawn out and ablated at its root, there would probably have been no change in the chyle stasis; *per contra*, by extirpation of the cysts formed by dilated lymph-vessels and ligation of the pedicle, all, or at least the majority of the efferent canals, would have been placed out of function, and in a very short time there would necessarily have been stasis transudation, by which the condition of patient would have been essentially the same as before operating. The obstacle compressing the thoracic duct may also be in the thoracic cavity, it may be an enlarged bronchial gland, and even if situated in the abdomen, it may not be discoverable; in short, the diagnosis in this respect is to ascertain that in view of the possibility of continuance of life with the presence of tho chylangioma, as shown by experience, there can be no thought of so severe an operation as laparotomy in a child five months old. Accordingly, the mother was directed to properly feed the child; up to date it still receives the breast and broth—with some meat. In a short time it will have to be weaned, because the mother begins to suffer; it will then be seen what effect change of diet will have upon the diseased condition.

Résumé of Ludwig's Analysis.

Fluid was odorless, of milky appearance; reaction alkaline; after standing there were found single fibrin flakes at the bottom of the vessel; its surface showed a layer of cream. Specific gravity 1.012.

Chemical Analysis.

	Per 1,000 parts.
Albumen	45.01
Fat	56.80
Sugar	0.20
Chlorine	3.41
Sulph. acid anhydr. (SO_3)	0.23
Phosphor. " " (P_2O_5):	
united with alkalies	0.14
" " alkal. earths	0.01
Carbon. acid. anhydrid. (CO_2):	
united with alkal	0.484
" " " earths	0.099
Potassium	0.24
Sodium	2.85
Calcium	0.077
Magnesium	0.016

This analysis refers to the fluid of September 11, 1876; the fluids from previous and subsequent tappings had the uniform spec. grav. of 1.012, and upon evaporation by heat always showed the same amount of solids.

Before proceeding to the consideration of another anomaly presented in Case 1, I must introduce the two succeeding cases. They should have been considered immediately following the history of Case 1, but one of them had not then been reported, and the report of the other case did not reach the library of the Surgeon-General's office until too late for insertion among the group to which it properly belongs.

Case LXXXVI.[1]—History unknown. Tradition states that the preparation had passed from a private collection as a gift into the anatomical museum of the University of Giessen. A female fetus, weighing 3 lbs. 14 oz., apparently fully formed, small and of weakly build. Fontanelles widely open. Right lower extremity three times as large as the left, right foot somewhat rotated inwards, and nearly four times as large as the left. Integument of entire extremity thick, leathery, and in numerous folds, more marked posteriorly. In the vicinity of the anus and at the lower edge of the gluteus maximus, a swelling began which extended to the inner side of the thigh, and passed in the hypertrophic right portion of the mons veneris. It was soft, elastic, and retained the pressure mark. Upon the integnment of the leg were small wart-like elevations. The right foot represented a misshapen mass, extending from the ankle to the point of the foot. Second and third toes of left foot elongated. See Fig. 53.

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[1] Cuny. Dissert. Inaug. Giessen, 1865.

Dissection exhibited enormous thickening of the adipose layer, with cavernous formations in the subcutaneous cellular tissue. The tumor previously mentioned consisted of fat, in which were several caverns communicating with the ends of veins. Lobular, cock's-comb-like excrescences projected into the caverns.

The whole tissue of the anterior side is spongy, covered by numerous openings of vessels; posteriorly there are also several such caverns, especially in the middle of the thigh and middle of the leg, also lined with excrescences and communicating with veins as previously described. The entire diseased part was abundantly supplied with enlarged veins, with thickened coats, which in some places were dilated into large sacs. The right iliac from its point of entrance into the true pelvis was expanded into a large sac, with thin walls, and filled with a trabecular network. This sac passed into the great ischiatic notch and below the spine of the ischium. Arteries and veins normal.

The condition of the lymphatic vessels could not be demonstrated. No special irregularity in the muscles. Those of the foot were displaced on account of bedding in of a fatty, fibrous tissue. Bones of the foot enlarged, elongated and thickened. Ductus Botalli open.

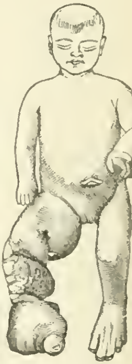

Fig. 53.

Case LXXXVII.[1]—Eugene Berry, nine years old. Family free from constitutional vice. A half-brother had an additional finger on each hand. At birth his feet presented the same malformation as at the time of the examination, but they were as small as the feet of other babies. The left hip was slightly enlarged, but the thigh and leg were normal in shape and size; otherwise his form was perfect. His health has always been good. During the fourth week his parents observed the excessive growth of the left leg and foot, which was very marked at the close of the first year and has continued uninterruptedly since, but has never been accompanied by soreness, redness, pain, or any observable morbid process.

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[1] From a report by Drs. Woods, Collamore, and Fisher, a committee of the Toledo Med. Association. Toledo Med. and Surg. Journal, Vol. I., p. 129, 1877.

The right nates presents a rather even, bulbous enlargement, projecting backward and extending beyond the posterior middle line about one and one-half inches, and dropping below the opposite buttock two inches. The right buttock measures three and one-half inches more in circumference than the left. On the right hip, as shown in Fig. 54, near the trochanter major, is a small enlargement, which, like the enlarged buttock, presents a slightly irregular but smooth surface, and is soft and doughy.

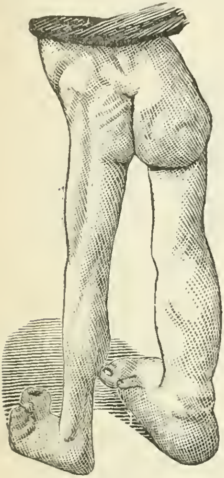

FIG. 54.

The right thigh (see Fig. 54) is somewhat enlarged, being fourteen inches in circumference, while the left measures but eleven and one-half inches. Neither the thighs nor the legs are elongated, and the knees are normal. The right leg is enlarged, the soft tissues presenting an elastic feel and a somewhat irregular surface. Its greatest circumference is fourteen and one-half inches, while the healthy member is but ten inches. At no time has any enlarged or varicose veins been observed, but at the time of the examination the surface was slightly congested. The right tibia is much enlarged, the development seeming to have been lateral, as the fingers can be pressed beneath a ridge on both sides. (See Fig. 55.)

The right os calcis is much enlarged, as are also all the tarsal bones. The metatarsal bones are thickened and elongated. The right great toe is slightly developed, but perfectly formed. The second and third are joined together and turned inward at a right angle. The remaining toes, three, making six on the right foot, are hypertrophied and turned downward, curving towards the sole of the foot. The circulation, muscular power, and sensibility are unimpaired. Motion is complete.

The left foot is much less deformed, and has developed less rapidly. The great and second toes are nearly normal. The third and fourth are webbed, project forward, and are turned up. Both little toes are much enlarged. On the sole of the left foot is a massive cushion.[1]

"The increased growth," remarks the reporter, "has not interfered with the relation of the parts, as the joints, even of the toes, are perfect in action, save from the interference of the superabundance of the surrounding soft tissues. The action of the muscles of the feet and legs is also perfect. No varicosity has ever been observed, although the circulation through the lower extremity has been from birth above the normal standard."

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[1] To Dr. Chapman, of Toledo, I am indebted for the opportunity of supplying the illustrations in this case.

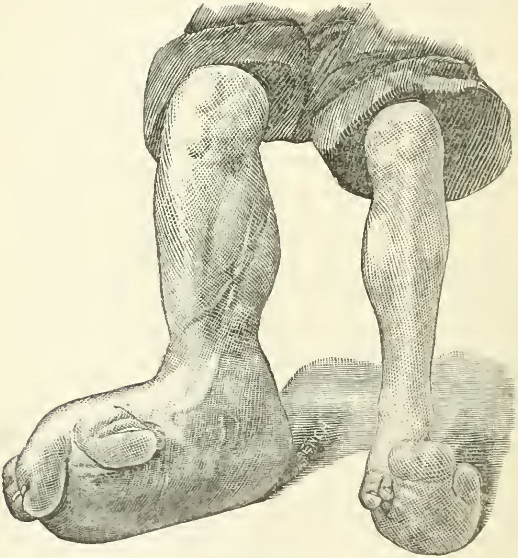

FIG. 55.

These cases (86 and 87) present many phenomena analogous to those previously described in Cases 1 and 8. The case of Cuny presents the structural alterations found in Case 8, and yet exhibits the same marked lobular formation of the panniculus adiposus of the thigh which characterizes the enlargement in Case 1. It also presents the interesting phenomenon of apparent transformation of the adipose formation into bloody tumors. The latter case (No. 87), in addition to its analogies to Cases 1 and 8, also resembles, in the preservation of normal sensibility, temperature, muscular power, and progressive excessive growth, the conditions present in Reid's case (No. 25) of increased nutrition of the left thoracic extremity, and Chassaignac's case of colossal development of the right extremities. Both of these cases probably belong to the second group of giant growths.[1]

To recur to the consideration of Case 1. In the description of the post-mortem appearances, I invited attention to the extra-peritoneal abdominal tumor, which consisted of five cysts (see Fig. 6) filled with blood-corpuscles, granular matter, and débris, which I suggested were devastated lymph-glands. The inference seemed probable that the accompanying disturbance of the lymph circulation found its cause in the obstruction presented by these obliterated glands. Among the congenital cases which I have been enabled to collect and reproduce in this memoir, no condition analogous to this phenomenon has been recognized. Fortunately, however, the following case, occurring in a female aged twenty-three, reported by W. Petters, supplies data which may satisfactorily explain the condition referred to. The case is so interesting and so replete with valuable information that I reproduce it in full.

CASE LXXXVIII.[2]—M. N., æt. 23, wife of a private officer, daughter of healthy parents, began, three and a half years ago, to suffer from her present affliction. Healthy when a child, she menstruated first between the fourteenth and fifteenth years, since when the menses have recurred every three weeks, lasting for three days. Three years and a half ago she noticed, upon rising from the bath, a white papilla about the size of a pin's head, upon the left labium majus. This she scratched. This being repeated, a yellowish white fluid dribbled away from time to time. As the patient was engaged to be married, a so-called sexual physician was consulted, who treated her for six weeks by application of tincture of iodine. The discharge became less, and ceased for six months, when she again saw a few white drops. She now noticed that the white papillæ had meanwhile increased in number, and that the left labium majus had become enlarged. Another physician was consulted, who first applied the tincture of iodine, and finally cauterized with nitrate of silver. This was at once followed by severe pains in the lower abdomen, so that the patient could hardly reach home. The discharge ceased. Patient was obliged to go to bed; had fever, thirst, and a feeling of internal heat; fainted repeatedly on account of pain. This condition continued for fourteen days; after this she recovered, and as for eight weeks the discharge failed to return, she was married December 22, 1871, one year after the beginning of the sickness. During the wedding night her husband (according to his own confession) was struck by the fact that the left labium was larger than the right. Coitus daily during the first period of married life, afterwards less frequent, and ordinarily only twice a week, always led to copious efflux of a whitish fluid. About two months after the marriage, patient placed herself in charge of a surgeon, who ordered three sitz-baths daily and a white ointment, after which treatment the discharge again ceased for eight weeks. Meanwhile patient became pregnant, and the white discharge ceased altogether. During pregnancy she frequently suffered from pain in the lumbar region and from abdominal irregularities. She aborted in the third month (February, 1872), after having endeavored to lift a heavy weight. The abortion was followed by peritonitis of the right side of three months' duration. With this there appeared in the right inguinal region a tumor of the size of a pigeon's egg, which, however, gave no trouble and gradually disappeared. During convalescence the milky discharge reappeared.[1] When the discharge was about to be checked the nipples became erect and the mammæ more tense.

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[1] Dr. Henderson (Edinburgh Med. Jour., Aug., 1877, p. 123) reports the case of a boy aged sixteen, which presented a remarkable hypertrophy of the right hand and arm. He regarded the case as probably an example of elephantiasis teleangiectodes, as described by Kaposi in the third volume of Hebra on Diseases of the Skin. The cut accompanying these brief notes of the case exhibits a deformity closely resembling the hand in the case of McGillivray (No. 30, Fig. 23) and the case of Friedberg (No. 48, Fig. 32). He does not state whether congenital or acquired.

[2] W. Petters.

Another surgeon ordered baths of oak-bark, and iron internally. This treatment having failed after two months, the patient consulted still another physician, who ordered a powder to be applied locally, which caused severe pain, but brought no amelioration. The discharge gradually increased in quantity and frequency, and the patient now consulted Dr. Weiss, of Prague, who treated her for some time as an out-patient. At this time she is said to have looked well, and there also was a striking increase in the size of the left thigh. Dr. Weiss, who ordered tinct. gallæ and iodine externally, and at first was willing to remove part of the labium, stated that upon one occasion he saw lymph in a jet flow from a pinhead-like opening of the labium. He, however, was unable to enter it to any distance with a bristle. He recommended her to go to hospital, which she entered April 28th, after I had, on the day previous, made the diagnosis of lymphorrhagia and lymphangiectasis.

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[1] "In many discharges looked upon as milk-secretion by the older physicians, there may have been a mistake of lymph for milk. Thus, the milk-sweat observed by Dr. Storch in a woman aged thirty, parturient for the fifth time, which continued for eleven days, and was accompanied by milky lochia, was very likely only a lymphorrhagia."—Petters, *loc cit.*

Buchanan. "in a case of lymphorrhagia in a woman aged forty-six, in whom the lymph exudation took place from vesicles upon the left thigh, as represented in the accompanying figure, and who, during the period of the lymph discharge, lasting fifteen years, had passed through two pregnancies, always accompanied by cessation of the lymphorrhagia, saw, during occasional cessation of the lymph discharge, a swelling of the breasts with a feeling of fulness and tension, and once even milk-secretion." (See Fig. 56.)—Med.-Chir. Trans., Vol. XLVI., p. 57, 1863, Lond.

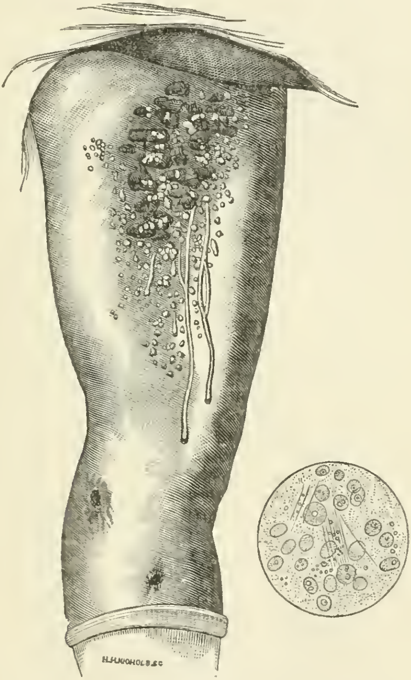

FIG. 56.

The patient subsequently stated that the left thigh had become more strikingly enlarged during the cessation of the discharge; that at the time of the flow she also felt herself getting thinner and losing strength. Questioned as to the cause of her local affection, she remembered that once one of her sisters, with whom she lay in bed, had pulled a few hairs out of the left labium; this very likely had no influence upon the origin of her disease.

Condition, April 27th: patient looks older than she is (like a woman of thirty); body medium; skin delicate; panniculus adiposus moderately developed; mammæ small, but solid; nipples well developed; muscular tissue thin and flaccid; a few freckles on face; eyes brown, expressive; cheeks not reddened; visible mucous membrane red; tongue moist, clean; neck long; thyroid gland small. Elevation of thorax occurs regularly; right thoracic half slightly more rounded than the left. No venous dilatation upon neck or thorax. Cardiac impulse feeble in the fifth intercostal space, between left edge of sternum and the nipple. Percussion sound clear and feeble, extending to the upper edge of fourth rib upon the left, and to the upper edge of the seventh rib on the right side. Cardiac dulness measures 5 ctms. square. Respiratory murmur feebly vesicular in inspiration, ill-defined in expiration. Heart-sounds normal, without bruit. Pulse rather full, 76 per minute. Abdomen retracted; hepatic dulness extends to about 3 ctms. below the costal arch, and to the middle line. Spleen not enlarged. Left half of mons veneris, containing a thick fat cushion, projects beyond the right. Left thigh strikingly enlarged; measurements: under pubic arch, 51 ctms. (right, 47.5); in the middle of thigh, 44 (right, 42); above condyles of knee-joint, 33.5 (right, 33.5). Whilst the right inguinal glands are mostly as large as beans and hazel-nuts, those on the left, above as well as below Poupart's ligament, are of the size of horse-chestnuts, so that the left inguinal region predominates; below the integument the touch discovers an irregular resisting mass—the greatly enlarged glands crowding each other. Left labium projects to the size of a pigeon's egg, is pale red, irregular, and covered with numerous nodules of rather firm consistency, some showing small centre depressions. The epidermis over the nodules seems somewhat less attached, but not quite loosened. The consistency of the labium is that of a connective-tissue stroma. The labium is somewhat sensitive to pressure, but the latter does not force out fluid. Nymphæ small, covered entirely by the labium; upon the external portion of the left, a small nodule, like those described. Mucous membrane of vulva and vagina roseate. The speculum showed slight chronic leucorrhea, and the sound a moderate retroversion and deviation to the right. Inspection of back shows nothing abnormal. Weight of body, 84 lbs. (in 1873 the weight was 98 lbs.). General health good; appetite ditto; bowels open every third day. The last menses continued, as usual, for three days, and in April occurred twice. On the forenoon following her admission the discharge reappeared, and it was seen that the labium became more tense, and that at several places, without visible lesion of the skin, minute milky drops exuded, which, after being enlarged, rolled off. The dried remains of these drops formed a yellowish white scab. About 50 grms. of a yellowish white, rather thin fluid was collected, which deposited a white, rosy reddish, soft coagulum of about the size of a bean—fluid alkaline; contained sodium albuminates, no sugar, no urea, and, under the microscope, red blood-corpuscles and numerous lymph-corpuscles, with free fat, but no epithelium. Rennet produced no coagulum; this excluded the presence of casein. Urine faintly acid; specific gravity 1.08; yellow, and contained but few chlorides.

Treatment.—She was advised to walk as little as possible; to have a warm sitz-bath three times a day; diet full; quin. sulph. 0.072 grms. morning and night. April 28th: no discharge. 29th: grms. 18 of a similar fluid collected and presented to Prof. Klebs for examination. It contained fat, red blood-corpuscles, and no other formed elements. April 30th: 105 grms. examined by Prof. Klebs. The fluid contained a coagulum more than one-half of its bulk; it was loose and transparent; besides fat and red blood-corpuscles, there were numerous lymph-corpuscles. Urine free from albumen. May 1st: 180 grms. collected. Temp. of body—A.M., 37° C.; P.M., 39.9° C. Pulse—A.M., 72; P.M., 76. May 2d: 80 grms. collected. May 3d: 70 grms. collected. 4th: 105 grms. collected, A.M.; spec. grav. 1.0190. 5th: 75 grms. in one and one-half hours. The several examinations resulted similarly, thus confirming the diagnosis.

Results of Analysis.

Analysis 1st. Weight of lymph, 18.62375.

Water	17.20000	Per cent. water	92.36
Carbon compounds	1.28200	" carbon compounds	6.88
Ashes	0.14175	" ashes	0.76
	18.62375		100.00

Analysis 2d. Weight of lymph, 71.890000.

Albuminates	3.59875	Per cent. albuminates	5.00
Extractive	0.56675	" "	0.78
Ether extracts (fats, etc.)	2.33625	" "	3.06
Salts insoluble in water	0.06300	" salts insoluble	0.09
" soluble "	0.43175	" " soluble	0.61
Water	64.89350	" water	90.27
	71.89000		100.00

The fats consisted principally of glycerine, compounds of stearic and paluric acid, slight quantities of oleic acid and volatile fatty acids. Cholesterine could not be demonstrated. Ashes contained principally sodium, lime, magnesia, traces of potassium and iron. Hydrochloric, phosphoric, and sulphuric acids were present.

Prof. Petters concludes that there must have existed dilatation of lymph-vessels; but he did not think it probable that the ectasia had advanced as far as the labium. He inclines to the view that the lymph in these regions, after having passed through the vascular walls, penetrated through hyperplastic integumentary tissue like through the pores of a filter, pressure upon the lymph reservoirs being the cause of the discharge.

The increased discharge during coitus is ascribed partly to the above and partly to nerve influence, Krause having proved that in dogs irritation of sensory nerves increases lymph secretion.

Cessation of the flow during pregnancy is explained (Petters) by the fact that the lymph is withdrawn from the reservoirs because needed elsewhere, and because the latter are compressed by the gravid uterus. Menstruation appears to have had no influence.

The ectasiæ were situated in the inguinal regions and below, and were also supposed to be in the true pelvis. The question whether the affection started from obliteration, atrophy, or other disease of the lymph-vessels, could not be determined.

Prognosis unfavorable. The efflux must lead to waste, and the hypertrophy, if increasing, to elephantiasis.

Therapeusis, after a review of the recorded cases, was regarded by Petters as offering no hopes, and therefore treatment was limited to bandaging the left extremity from the toes to the hip.

May 6th: 1,408 grms. collected; 71.89 grms. discharged in ten minutes. Menses at night.

May 7th: discharge less; 71.89 grms. in 32 minutes. Pain in abdomen and back. No stool. Urine—spec. grav. 1.010; containing epithelium, blood-corpuscles, and vibriones.

May 8th: menses scant; bowels moved; pain subsided; discharge ceased.

May 9th: no discharge. Menses ceased at 8 P.M.

May 10th: no discharge during the day; it reappeared towards night; 9 grms. collected.

May 11th.—The discharge reappeared P.M.; 35 grms. collected in 85 minutes.

May 12th.—Copious discharge about 3 P.M.; 35 grms. were collected in 30 minutes, and during the evening 49.7 grms. in 45 minutes.

May 13th.—From 8.45 A.M. to 9.15, 30 grms. collected. Had two stools in quick succession.

May 14th.—Between 7 and 8 A.M., 59.1 grms. collected, and between 11 and 11.30, 52.9 grms. of lymph discharged.

May 15th.—50.5 grms. in 55 minutes. Patient weighed 48.55 kg., *i.e.*, 0.91 more than on April 26th. General condition good. She became more animated and hopeful. But a different condition supervened. P.M., she had pain in the lumbar region and tearing pains in both lower extremities. Lassitude, fever, loss of appetite, and several red spots appeared upon the thigh, corresponding to the lymph glandular tumor. When she endeavored to rise about 6 P.M., she was overcome by such weakness that she nearly fainted. Thirst and heat increased, and she felt unusually weak. Lymph discharge ceased.

May 16th.—Appearance bad, great thirst, no appetite. Integument of inner surface of left thigh down to the condyles of the knee-joint, of the external surface to the lower third, mons veneris and region above left inguinal region, vividly reddened in stripes and sensitive. Glandular tumor and left labium somewhat swollen, the latter dry. No lymph discharge. Temperature in axilla 39.6, pulse 120. Temperature in erythematous portion of left thigh 39.1.

Lymphangitis had evidently supervened, as shown by fever, erythema, and cessation of the lymph discharge. Although the temperature of the affected portion appeared below the general temperature, yet it was considerably higher than the temperature of the other surfaces, and perhaps rarely surpassed that of the general organism, although the fact could not be proven by a thermometer, which, though sensitive, was not adapted to take the temperature of surfaces. Peritonitis set in finally, and the patient died May 22d.

Approximative estimate of the lymph discharge during her stay in the hospital, about 1,225 grms. During her sickness, not counting the occasional discharges, about 18,515 grms.

Sectio cadaveris by Prof. Klebs, 28 hours after death.

Body well formed; in the upper half very extensive, somewhat irregular, spotted, bluish discoloration of the skin, more regularly extended upon the dorsum, where we see numerous punctiform spots, in part somewhat raised, and among which we find here and there small ecchymoses in the upper layer of the integument. In one place are found larger prominences, about 2 mm. in size, containing in the centre a suppurative point. Similar ones are found in the upper cervical region, more ecchymoses in the sacral region. The anterior aspect of the lower extremities shows only a pale, brownish blue discoloration in stripes; face on left side strongly cyanotic and swelled; conjunctivæ bulbi very pale.

Skull rather regularly formed, large, wide; diploic substance well preserved; thickness moderate; upon the inner surface a slight hyperostosis, with higher developed vessels. In the longitudinal sinus a long blood-clot with fibrinous deposit.

Dura mater hyperemic, tense; inner surface moist; vessels of inner surface of dura irregularly filled; upper gyri little flattened, more on the left than on the right side; vessels in general copiously filled with blood. Beneath the tentorium a little clear fluid, in the sinus basilaris a copious amount of dark fluid blood. Pia mater delicate, its vessels filled. Lateral ventricles not dilated. Cerebrum flabby, tolerably well infiltrated; vessels of the white substance of the left side filled with fluid, partly with coagulated blood; substance generally pale, only here and there greater capillary fulness. Cerebellum strongly infiltrated by serum. Cortical substance intensely reddened, as also pons and medulla oblongata.

Abdomen puffed up, moderately tense; subcutaneous connective tissue well developed, fat of a bright yellow color; subserous fat well developed. From the abdominal cavity flows a considerable quantity of thin, greenish yellow fluid; in it floats a number of bright yellow floculi. Muscular substance everywhere well developed, infiltrated throughout, brown red. Towards the mons veneris the fat cushion increases greatly. The skin is strong, filled with numerous ecchymoses. Left labium much swollen, tough; mucosa cyanotic; surface covered by a large number of small ecchymoses and partly also nodular prominences, some of which have a yellow scab, others presenting the impression of vesicles filled with fluid. Towards the inguinal region we can trace in the adipose tissue a great number of moderately enlarged lymph-glands, very strongly reddened, in places filled with ecchymoses. The whole tissue is saturated by a clear, watery fluid; from the single glands we can trace tortuous lymph-vessels and blood-colored strands. Towards the surface of the labia the tissue assumes a dense, more fibrous character, and the fat-lobules disappear. Diaphragm high, on right side up to the third, on the left up to the fourth rib. Lungs somewhat retracted, slightly pigmented, pale; pleural cavities free; pericardium contains some fluid. Heart of moderate size, diffusely tinged by the coloring matter of the blood along the veins of the right side, also across the right auricle; right side strongly contracted, fatty upon the surface; in the left little blood, right heart tolerably full; auricle contains a large fibrinous coagulum, as well as the ventricle; heart-muscles pale brown, rather well developed; valves slightly reddened by imbibition, delicate; on the left side slight coagulum and little imbibition of valves. In endocardium of left ventricle numerous bluish places, showing, however, no hemorrhagic character. Left lung large, bluish on surface, pleuræ filled with numerous bluish and dark brown ecchymoses, apparently let into the pulmonary parenchyma. Edema and hyperemia of lung-substance, which everywhere contains air. Bronchi contain a frothy, watery fluid; walls delicate, somewhat hyperemic; right lung somewhat larger than left, strongly edematous and hyperemic; in the lower lobe somewhat less hyperemic. Air everywhere. Omentum extensive, fatty, covers intestines completely; in the true pelvis everywhere firmly attached to peritoneum of anterior and lateral wall; intestines meteoristic; parietal peritoneum shows strong capillary coloration, and is covered by fibro purulent masses of loose consistency.

In right inguinal region glands greatly swelled and reddened, on left side the largest; an extensive mass of tumors, measuring 7½ ctms. along the inguinal fold, and 4½ ctms. vertically. Upon top we distinguish upon section a cortical layer 1½ ctm. in thickness, consisting of a homogeneous, dense, grayish red mass; within this layer we find only a few caverns with smooth walls 1–3 ctms. wide, anastomosing partly with each other. About the middle, one of the caverns extends to the surface of the cortex surrounded by a crown of smooth-walled caverns, communicating frequently with each other and having a diameter of from 5 to 10 mm. Towards the hilus they pass into tortuous canals which accompany the blood-vessels. Farther down are found somewhat less enlarged, simply reddened, dense lymph-glands; one of which, measuring 4 by 2 ctms., consists of a soft brown-red and moist tissue, but shows in the centre minute spherical caverns and thinned walled canals ½ mm. wide. In the caverns of the larger glands is found a thin, slightly red fluid, and reddish fibrin-coagula not quite filling the lumen. Vena saphena passes parallel with the lymph-vessels of the large glands; it is collapsed. Small branches may be traced by the probe into the lymph glandular substance, without showing a communication with the caverns.

Subserosa in left iliac fossa, and along the ureters edematous. Above the enlarged glands, between the latter and the fascia lata, we enter wide smooth-walled caverns, numerously partitioned by thin trabeculæ and communicating by openings into each other. Such a branch passes under Poupart's ligament in the direction of the great vascular trunks, divides here into two branches, one of which passes to the left into the iliac fossa, soon to turn and reach the region of the large vessels; here it appears to end, about 6 ctms. above Poupart's ligament, on a level with the promontory, 7 ctms. below upper edge of psoas, upon its lateral surface; whilst the second branch can be traced into the depths of the true pelvis. Here also the caverns contain but little clear fluid, only a few of the wider recesses contain slightly reddish fluid and small coagula. Spleen somewhat enlarged, 13 ctms. long, 8 wide, 3½ thick, covered on surface with fibrin masses; substance flabby but tough, reddish brown. Left kidney covered by a copious layer of fat, rather large, capsule easily separated, flaccid, tissue strong, surface pale yellow, large vessels hyperemic, showing net-like arrangement; medullary cones moderately reddened. Stomach of moderate size; mucosa pale, with little mucus, tinged with bile, somewhat macerated, slightly opaque in general. Intestinal wall somewhat thickened; on small intestine a large mass of pale yellow, tough contents. In large intestine masses somewhat consistent, also yellow in color, entire mucosa pale. No other important changes. Liver somewhat enlarged, covered by fibrin masses, mostly upon right lobe, the latter 10 ctms. wide, left 10 ctms., height of right lobe 15, spotted red, here and there a few dark ecchymoses. Parenchyma regularly brownish yellow; here and there centre of lobules more strongly reddened, substance of parenchyma has a dull, opaque appearance.

Lumbar lymph-glands natural in size; but on the left side, behind one of the glands, is found a moderately large lymph-cavern alike in character with those of the left inguinal region. Lymph-vessels can be traced to the diaphragm, decreasing in size. Thoracic duct normal in dimensions, 6 mm. in circumference above diaphragm, somewhat narrow above.

In the pelvis all the parts are grown together by connective-tissue masses; within the adhesions vesicular cavities filled with clear yellow fluid, are found.

Vagina of moderate width, rugæ large, mucosa cyanotic, uterus small, fundus turned to the right, neck straight, cavity measures 6.2 ctms., 2.5 of which belong to the neck. Walls pale, of moderate thickness, dense. Appendages grown to each other and to the adjacent viscera and parts by loose connective-tissue masses, which, besides larger edematous cavities filled with a clear fluid, contain a series of greater and smaller intercommunicating caverns, filled with pus, and from their connection with the uterus prove to be the dilated tubes. Its walls are very thin, easily torn, and covered by soft yellowish masses. Remains of ovary not demonstrated with certainty by macroscopic inspection. Upon left side also intimate union of appendages. Between the sigmoid flexure and the uterine appendages, viz., the tube and inner surface of the uterus, lies a tumor of apple size, having a jelly-like feel, and measuring 6 ctms. transversely, by 4 ctms. antero-posteriorly. Upon section it is found to consist mostly of gelatinous substance, of a gray-reddish color, and surmounted by a strong albuginea 1 mm. in thickness. In the substance of the left ovary are imbedded several foci of spheroidal form of cherry-kernel size, more dense than their surroundings, of yellowish color (inspissated pus), which reminds one of that of the tubular contents of the opposite side.

This instructive case presents, in its insidious inception, continuous progress, intermittent discharge of lymph, fatty developments and other concomitant phenomena, the typical history and course of cases of lymphorrhagia. Beginning in the formation of a white papilla upon the left labium majus, which, having been pricked, exuded a white fluid; it attracted but little attention until a number of vesicles appeared, accompanied with enlargement of the labium. Subsequently the inguinal glands became swelled and soon the left thigh began to increase rapidly. The impediment to the lymph-stream and stasis of the fluid were manifested by the recurring discharges and progressive hypertrophy of the parts within the area of the lymphangiectasis. Prior to the dribbling of a few drops of the whitish fluid from the ruptured vesicles the obstruction to the lymph-stream must have occurred, and the subsequent post-mortem examination locates the obstacle in the enlarged and impervious inguinal ganglia of lymph-glands. In this particular the case differs from Case 1, inasmuch as in the latter case the impediment was located in the devastated retroperitoneal glands. The frequent recurrences of the discharge relieved the lymph stasis, and while the loss of fluid seriously affected the patient's constitutional vigor, it obviously retarded the local hypertrophy; yet this was sufficiently marked to illustrate the effect of lymph-stasis in producing increase of the adipose tissue. The post-mortem examination disclosed a greatly increased fat cushion in the neighborhood of the mons veneris and in the left labium majus. The surface of the latter was covered with a number of vesicles filled with fluid, its structure was saturated with a watery fluid, and tortuous lymph-vessels could be traced in the direction of the enlarged and impervious inguinal glands.

In this case, as in similar cases, the enlargement of the left thigh was more striking during the cessation of the discharge, obviously because the fluid was retained in the part, in consequence of the interruption to the ordinary course of the lymph-stream. This enlargement was mainly due to the increase of the panniculus adiposus, and in this particular the case verifies the general law which I have endeavored to set forth, that retention of lymph in any circumscribed area will be followed by hypertrophy of the fat-tissue. In the integument, especially towards its surface, where the tissue was saturated by a clear watery fluid, it assumed a "dense, more fibrous character, and the fat-lobes" disappeared. The watery fluid which infiltrated the skin occupying the "lymphatic radicles," and spaces within the tissues, was either transuded blood-serum, or lymph qualitatively altered, impoverished, and poor in its "essential and constant elements," and, as has been shown in a number of cases previously cited, was directly associated with proliferation and condensation of connective tissue.

The patient of Petters, as was the case with all the instances of lymphorrhagia, with the single exception of the youth seen by Demarquay, lost flesh and strength during the flow; and, generally, so great was the physical exhaustion and rapid waste that the sufferer was compelled to seek relief from the attending distress and discomfort, in bed, until by rest, tonics, and a nutritious diet, health was restored, not, as a rule, however, up to the standard at which it was prior to the discharge, so that after every recurring loss of lymph, the constitutional vigor of the patient was manifestly depreciated, until, finally, debility became the marked and predominant characteristic of the affection. During pregnancy and lactation, though the cases are too few to admit of any general conclusion, the discharges of lymph, as a rule, ceased to recur when these intercurrent conditions had terminated. The facts, nevertheless, point to some demand upon or consumption of the lymph during the existence of either of these physiological conditions, and indicate, at least in regard to the female sex, that lymph is something more than a vehicle for the conveyance back to the general circulation of the superabundant material of nutrition and the products of the waste and interchange of the tissues which is constantly taking place in the animal economy. Whilst the cessation of lymphorrhagic discharges during pregnancy and lactation has been uniform, it does not appear that menstruation has so constantly borne a like relationship to the accumulation and consumption of the lymph. On the contrary, in several of the cases of lymph-tumors involving the female genitalia (see cases of Bryk and Chadwick), the lymphatic developments augmented with every recurring catamenial period. In explanation of this circumstance we may invoke the differing relation which pregnancy and lactation, and menstruation bear to the economies of the female constitution. Pregnancy and lactation involve the nutritive processes and make heavy demands upon the assimilative functions. They are consumers of material and call into active operation the processes of preparation and elaboration of nutriment, which, in those neither pregnant nor nursing, would be adapted to their physiological wants, or, perhaps, superabundant, but would be unfitted either for the fetus or the nursling. The menstrual hemorrhage is practically a loss, but accompanied with a turgescence, an efflux of blood to the genital organs, conveying an excess of plasma, and supplying additional material. It may, then, be entirely consonant with the laws of nutrition that lymph-tumors involving the female genitalia should develop more rapidly during the continuance of the menstrual turgescence of the parts.

Lebert[1] has invited special attention to a form of anemia produced by an excessive flow of lymph, which he classifies among the spoliative anemias, signifying "a consumption of the elements of the blood more rapid than their production." The symptoms of lymphorrhagic anemia (Lebert) "are analogous to those produced by hemorrhage[1]—especially hemorrhage from the uterus." The cases of Fetzer, Day, Petters (No. 87), Buchanan, Desjardins, and Roberts supply illustrations of this variety. The losses of lymph in such cases usually consist of discharges recurring at irregular intervals, sometimes in small quantities daily for several consecutive days, and at other times in large quantities after long intermissions. Fetzer's patient lost in one continuous flow 57 oz., and in the case of Desjardins the lymphorrhagia frequently continued for ten or twelve hours, and on one occasion for forty-eight hours, and the quantity evacuated per hour was 120 grammes.

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[1] Archiv. Général de Med., April, 1876. Also Month. Abst. Med. Sci., Vol. III., p. 389.

The immediate effect of the loss of lymph is upon the constitution of the blood, diminishing the number of red blood-corpuscles and quantity of albumen, alterations analogous to those which occur during pregnancy and lactation. There is also lessening of the quantity of blood, an effect opposite to that which takes place during pregnancy, but the same as follows hemorrhage. Another analogy between the condition existing during pregnancy and that caused by lymphorrhagia and lymphangiectasis is exhibited in the tendency to stases of blood.

The case of Petters (No. 87) exhibits also the tendency, which attaches as well to the cases of lymphangiectasis as to those of lymphorrhagia, to frequently-recurring attacks of inflammatory processes of an erysipelatous or elephantoid character. This predisposition is not so universal among the congenital as among the acquired forms, due, undoubtedly, to the fact that in the former the affection frequently finds its cause in some defect of formation of some part of the lymphatic apparatus, whereas in the acquired forms the immediate cause is generally traceable to structural changes produced by previous inflammation, traumatism, or thrombosis. There is no doubt that among the congenital cases malformation is the most frequent cause; yet it is not improbable, as has been previously suggested, that morbid processes taking place during intra-uterine life have likewise produced the various forms of occlusion, dilatation, and narrowing of lymph channels, and it is probable that the inflammatory processes which subsequently during extra-uterine life invaded the affected parts were merely recurrences of similar morbid conditions which had attacked the parts prior to birth. However different the morbid processes may have been in the congenital and acquired forms, the structural alterations of the parts involved have been the same, producing hypertrophy and condensation of the tissues. Quincke insists that inflammation and lymph-thrombosis are the pathological processes which usually cause circumscribed narrowing or complete occlusion of lymph-channels. These conditions may be produced by thickening of the coats of the vessels, adhesion of their internal surfaces, fibroid transformation of their coats, calcification of their coats, or of a thrombus, lodgment of particles of cancerous or tuberculous matter in the vessels, compression from cicatrices, induration of surrounding connective tissue, tumors, diseased glands, stasis of blood in large veins, cardiac diseases, excessive exercise of function, paralysis of the vessels, and mechanical obstruction to the lymph-stream, and "within the area from which the narrowed or occluded vessel originates there is lymph-stasis, dilatation of truncal vessels, and edema of the tissues."

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[1] "It has also happened many times, that, when these lymphorrhagias had ceased for some time, the patients complained of great uneasiness, a sort of lymphatic plethora, which caused them to open the varices," Lebert, Traité d'Anat. Patholog. gén. et spé., p. 548.

In a large majority of the cases of lymphangiectasis and of lymphorrhagia the fluid which either accumulated in the affected area or was emitted through the ruptured or incised orifices presented the physical characteristics and appearance of chyle, due to the quantity of fat it contained. In a few cases the fluid which was at first discharged, or which was collected in the vesicular formations, was serous and gradually changed into a chylous or milk-like fluid. In several instances this change in the color seemed to be immediately connected with the digestion and assimilation of food. In Roberts' case the vesicles which thickly studded the abdomen varied "in color and fulness. The whiter the more distended, and when pale they were flaccid. The color was also affected by the state of the patient's health, and by the digestion and assimilation of food; when feverish they were pale, but when the appetite and sleep returned they became milky and turgid. As his health finally declined, the milky appearance became less marked, and in the last week of his life they became permanently pale and flaccid. They were paler in the morning before breakfast, after the prolonged fast of the night. Soon after breakfast they began to grow fuller and whiter, which increased through the day and attained its maximum about eight hours after dinner. The discharge followed the same rule." This case exhibits also the effect of exhaustive and febrile conditions upon the quantity, opacity, and color of the flow, and illustrates the spoliative influence of starvation and fever, agencies which Lebert enumerates among those which consume the red blood-corpuscles and lymph. But whilst the various changes in the chemical constitution of the fluid exuded in the case observed by Roberts may be thus accounted for, the explanation is not applicable to very many of the cases, for, in a large majority, fever was absent and the ingestion of food was without observable effect upon the chemical constitution and physical characteristics of the discharged lymph. Various hypotheses have been offered in explanation of the changes which take place in the lymph in cases of lymphangiectasis and lymphorrhagia, but all are unsatisfactory. The alterations consist chiefly in an increased proportion of fibrin, the addition of numerous cell-elements, not unlike endothelial cells, white, and occasionally red blood-corpuscles, lymphoid cells, granular matter, a varying quantity of albumen and fat, which, in a measure, must owe their presence to pathological processes affecting the intima vasorum, and to transformation of the inflammatory products and of the cell-elements of the diseased vessels.[1]

In view then of the considerations which relate to the lymph and lymphatic apparatus and the devastating influences of the morbid conditions upon the general constitution, it is not surprising that so many of the cases eventuated in the development of pulmonary tuberculosis. In explanation of this manifest connection between the diseases of the lymph channels and tubercle, we may either accept the theory of auto-infection or invoke the aid of anemia, blood impoverishment, exhaustion from loss and consumption of red blood-corpuscles, or the histological identity of the tissues affected in the primary disease of the lymph channels and subsequent tuberculosis.[2]

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[1] To avoid repetition I must refer the reader, for a discussion of these hypotheses, to my essay on occlusion and dilatation of lymph channels, published in the N. O. Med. and Surg. Jour., July, 1877.

[2] If deemed advisable to republish this memoir in a separate volume, the author will add a general summary and a chapter on the treatment.

CLINICAL CASES.

CYSTIC TUMOR OF VAGINA REMOVED BY EXTIRPATION.

BY
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ON taking charge of my service in the Charity Hospital last September, I found in one of the wards the following case, which I have thought of sufficient interest to place on record. For the notes of the case I am indebted to the courtesy of Dr. Cladek, House Surgeon to Charity Hospital.

"Isabella F., æt. 18, single, admitted to hospital June 18, 1877.

Has always enjoyed good health, until two or three weeks ago, when she noticed a leucorrheal discharge which soon became muco-purulent. This alarmed her, and thinking it a gonorrhea, she applied for admission to the hospital.

On admission, the patient seemed in good general health—showed no evidence of syphilis, past or present—is of rather slight figure, a blonde, and possibly strumous. A local examination at once revealed the muco-purulent discharge, which was copious and rather offensive in odor; no distinct vaginitis was detected, but the labia were somewhat swollen and edematous. A swelling was also noticed on the posterior vaginal wall, fluctuating, hemispherical in shape, about two inches in diameter; a careful rectal examination was now made, and the tumor was felt between the rectum and the posterior vaginal wall. The patient was not aware of the presence of this tumor until told of it, and it had never caused her pain or the slightest inconvenience. She was treated for the leucorrhea, which, however, was very obstinate and did not improve, and no further notice was taken of the tumor until September, when Dr. Lee took charge of the service.

On September 11th an exploring needle was introduced by

Dr. Lee, and a hypodermic syringe full of clear jelly-like fluid was drawn off, resembling in color and consistence the white of egg.

A day or two after this it began to inflame and to pain her; and, as it was thought best to remove the cyst at once, on September 15th the patient was etherized, and the tumor removed by an elliptical incision, the vaginal flaps being brought together with silver wire. No complication occurred; the sutures were removed on the eighth day—the wound closing partly by granulation and partly by first intention—and the patient was discharged perfectly cured October 1, 1877."

This is the second case of well-marked interstitial cyst of the vagina occurring in my wards at the Charity Hospital within the last two years. The other was presented in a multiparous woman of middle age, and had existed for a number of years. At least one of her children had been born since her notice had been attracted to it; but after that parturition it increased rapidly in size, made coition painful, and caused constant leucorrhea, which was very acrid and offensive in odor.

In both cases the cyst occurred on the posterior wall of the vagina; in each the patient sought advice for relief of the leucorrhea, and in each extirpation of the cyst was performed with entire success. In the first case a laborious effort was made to dissect the cyst from its vaginal attachments, but without success, and the upper segment of the cyst with the vaginal wall that covered it had to be cut away.

Profiting by this experience, I made no attempt to dissect out the cyst in the case above narrated, but at once excised the greater part of it by parallel incisions near the base, and closed the gaping wound with lateral sutures, as in the operation for elytrorrhaphy.

This method I would recommend in all cases where the cyst is large (in both of mine it was as large as a small orange and seemed to fill the vagina), for no tendency to atresia need be feared in tissues which are already so overdistended.

For an extremely interesting and well written résumé of this class of neoplasms, I would refer the reader to Dr. Paul F. Mundé's article in the AMERICAN JOURNAL OF OBSTETRICS for October, 1877.

A CASE OF SPINA BIFIDA TREATED BY ASPIRATION.

BY
H. K. CUSHING, M.D.,
Cleveland, Ohio.

I ATTENDED Mrs. B., thirty-two years old, in her fifth labor, on the morning of June 13, 1877. When examination was made, the os uteri was fully dilated, with the bag of waters protruding through it into the vagina.

I could not determine the fetal presentation through the waters, and, as these had accomplished their full purpose in dilating the os, and as the pains were regular and efficient, I ruptured them with a probe, a large flow escaping.

Examining now to learn the presentation, I was surprised to find what seemed another sac of waters occupying the site of the one which had just been ruptured, and filling the vagina fully.

The first thought was that I must have punctured the distended and dislocated bladder, and that the sac now presenting was the true amniotic sac. But, on reflection, I felt assured that I had examined the first sac up to and within the os uteri, and could not have been thus mistaken. But what was the second sac? It was thicker walled, larger, and more resisting than the amniotic sac, and indistinct septa or bands could be felt in its walls.

I passed the finger around it, and up into the uterus, and traced it to the fetus, but to what part it was attached I could not decide. I thought not the head, as I could not distinguish the cranial bones, and thus the probability of its being a large encephalocele, which had occurred to me, was made unlikely. All efforts at examination, however, were unsatisfactory, as the size of the presenting sac made it difficult to reach its attachments, and because the attempts to do this brought on severe uterine pains.

From the moment of the puncture of the sac, the uterine contractions and the accompanying voluntary efforts became severe, with very brief intervals of rest.

The presenting tumor distended the vagina, the perineum, and the vulva, much more than a fetal head would have done as it was crowded along.

Ether was given with little apparent effect in lessening pain at the time, but after delivery, Mrs. B. did not realize that she had suffered much during it. To the lookers-on, the labor seemed very severe for the half-hour it lasted.

As soon as the tumor passed the vulva, the hard pain ceased. After a little the breech emerged, and the trunk and head slowly followed.

The child cried and breathed well at once, and seemed perfect in all respects, except the tumor, which was a lumbo-sacral spina bifida larger and heavier than its head.

I wish to call attention again to the severity of the labor while the tumor was passing through the parturient canal, and to the statement that pressure upon it enhanced this severity. In the first attempt to make out the nature of the tumor after the rupture of the waters, I for a moment thought I must be pressing on an inverted portion of the uterus, it seemed so sensitive.

This was quickly disproved, and I then supposed that, from the length and strength of the pains and their brief intervals, I had been misled in thinking that pressure on the tumor had any connection with them.

It became plain by repeated trials, however, that I could not press on the tumor during a pain without increasing this manifestly, and that, if I refrained from touching it until pain had ceased, and then pressed it, pain was immediately renewed, and continued without interruption while pressure was kept up.

Did the great distention the vagina endured during the extension of the spina bifida, augmented, of course, by the exploratory manipulations, produce this violent expulsatory action through reflex agency?

Or did the compression the spina bifida received in the parturient canal pain the child so severely that its consequent movements aroused the uterine powers to unwonted action?

After birth, moving the child or handling the tumor invariably caused it to cry out and to move its limbs vigorously.

The tumor was of a dark red color, semi-transparent upon its fundus, and covered with skin, except upon an irregular surface some two and one-half inches by one and one-half in dimensions.

This surface consisted of a thin, smooth, translucent membrane, through which there was a constant but slight exudation of somewhat bloody serum. The tumor was greatly engorged by the pressure endured in the delivery, but its dermal covering was also the seat of dark-colored nevous marks. There were also lighter-colored nevous spots on the child's face.

The dimensions of the spina bifida were taken by calipers on the third day from birth. The longitudinal diameter was five inches, the transverse four, and that from the root of the pedicle to the outer border also four. The pedicle was short, and measured three inches in each diameter. The lower border of the pedicle was one and one-half inches from the anus, but the sac bulged below the nates and well up over the loins.

From its great size and consequent danger of rupture, I determined to withdraw the fluid by aspiration as soon as lactation was established.

On the third day, the mother having some milk, and the child having nursed, chloroform was given it, and a full pint of bloody serum was withdrawn by aspiration.

The puncture was made well to one side, to avoid the ordinary site of the nervous distribution usual in lumbo-sacral spina bifida.

After the fluid was withdrawn, a light elastic band was put around the pedicle, with the hope that it might cause union of its constricted surfaces, thus separating the cavity of the tumor from the spinal canal.

The sac, still holding an ounce or two of fluid, which was allowed to remain in it, was turned up on the child's back and retained by bands of adhesive plaster. Not an unpleasant symptom appeared during the aspiration. Three hours after, the child nursed heartily, and again three hours later. It vomited after the second nursing, and became feverish and worried with pain.

For some days after this it did not nurse, but took occasionally a little of its mother's milk from a bottle.

Forty-eight hours after the aspiration the elastic ligature was taken from the pedicle, and the child soon became easier, and the fever ceased. Two days later the straps were removed, as they were beginning to excoriate the skin. The sac had partially refilled, containing now perhaps four or five ounces. In the course of the next ten days, a diminution in size was evident, partly from a serous oozing from the surface deficient in skin, but chiefly from absorption. The officinal gutta-percha solution was steadily applied to strengthen and protect the thin surface.

On the twelfth day after the aspiration, the surface deficient in skin separated from the skin-covered portion, thus converting the spina bifida from a sac into two large flaps of skin. From the inner surfaces of these a scanty purulent discharge was given off. All serous discharge ceased with the spontaneous opening, and I had no doubt, therefore, that the opening into the spinal canal had been closed permanently by the ligation.

The child did well uninterruptedly, having at no time any symptom of nervous derangement except occasional oscillations of the eyeballs.

The two thick flaps into which the spina bifida had been resolved lessened rapidly in size by shrinking and corrugation of structure, and by July 15th they were reduced to a solid mass as large as a fair-sized black walnut. There was no discharge from it, and it had ceased to be sensitive, even to rather rough handling.

The fluid aspirated from the spina bifida had a specific gravity of 1007.5, and was slightly albuminous. The microscope showed numerous blood-cells, and the albumen was probably from the blood present in the fluid.

About three weeks after birth a fulness at the anterior fontanelle, and in the line of the sagittal suture, began to be suspected.

In another week it was clear that all the sutures of the cranial vault were being separated by fluid, and that an unmistakable hydrocephalic condition existed. This increased rapidly, and had become quite pronounced within three weeks after it was first suspected. It was treated by the plan of Gölis, of Vienna, with inunction of mild mercurial ointment to the scalp, and the daily administration of small doses of calomel. As the hydrocephalic condition increased the child wasted bodily, lost its appetite, and finally ceased to nurse. It died from inanition when ten weeks old, having never had convulsions or any strongly marked nervous symptom. To my great disappointment an autopsy was not obtained.

Three features in this case have chiefly interested me. Of these, the perplexity which attended all efforts to determine the character of the presenting sac during the labor is one.

If I had not reached the case until after the amniotic sac had naturally emptied itself, I presume I should have ruptured the spina bifida on the supposition that it was the amniotic sac.

Dr. Gross, in his article on spina bifida, says that when the sac is ruptured during labor the child is stillborn. Even if this had not occurred, it would have been a mortification to me if I had ignorantly ruptured it.

Another relates to the augmentation of the uterine and accessory efforts when pressure was made on the spina bifida during its transit of the parturient canal, as already described.

Does this throw any light upon the causes of parturient action in the second stage of labor?

The third one is the apparent success of the simple measures adopted for the cure of the spina bifida.

Dr. Holmes, in his work on the surgical treatment of the diseases of infancy and childhood, says, in relation to the treatment of spina bifida, "that in fact the radical cure of such a tumor is so rare a result of any method of treatment, that it is always regarded as a surgical curiosity. Whatever curative procedure may be adopted, there is danger that diffuse inflammation will result and extend from the interior of the sac to the spinal membranes, or to the cord, or such of its nerves as may be implicated in the structure.

In Prescott Hewitt's paper, so much referred to on this subject, he says "that of twenty tumors in the lumbo-sacral region which he had had the opportunity of observing, there was only one in which the cord or nerves were not connected with the sac." Also "that when the opening into the spinal canal is free and direct, there is a very great probability of finding the cord or nerves in the sac; and that there is no possibility of distinguishing a case in which they are present from one in which they are absent."

The pedicle was so wide in this case that the spinal opening can hardly have been otherwise than large and free, so that a favorable result from treatment was hardly expected. I concluded to combine aspiration, as the least dangerous method of withdrawing the fluid, with temporary use of the elastic ligature, as the most manageable means for producing the requisite inflammation to separate the cavity of the sac from the spinal canal. Whether the success was due to this combination, or whether the case was an exceptional one without nervous elements in the sac, cannot now be known.

The hydrocephalic development was a great disappointment, appearing as it did just as the hope of a successful termination to the spina bifida was most encouraging.

CASES OF DELIVERY BY EXTERNAL PRESSURE.

BY
D. M. CURRIER, M.D.,
Newport, N. H.

I WAS greatly interested in the paper and discussion thereon of Dr. J. C. McMechan, read before the Cincinnati Obstetrical Society, and reported in the July No. of this journal.

At the close of that discussion Dr. McMechan recommended "careful observation on the subject so as to develop enough reliable information to enable us to judge accurately of the value of external pressure in delivery." Now, I supposed that every obstetrical practitioner was in the habit of using external pressure to expedite delivery. I know that I have, nearly from the time I first commenced practice; but I suppose that we, up here in the isolated villages of New Hampshire, do not know all that the rest of the profession are doing throughout the land.

I am greatly obliged to Dr. McMechan for the history of the practice, for that was something I had not looked up.

My own experience I will give as concisely as possible.

CASE I.—The first case in which I was struck by the benefit of external pressure in childbirth was the case of Mrs. B., aged about forty, the wife of a railroad contractor, boarding at a hotel—therefore having her whole time at her disposal.

She was a pale, weakly-looking woman. She had had several children, but none living at that time; they were either still-born or died in infancy, and she was anxious to have a living, healthy child. Was called about 11 P.M.; found presentation and everything right, with good pains for the stage in which I found her. She did well till 3 P.M., when I was called into the room by the nurse, whereupon she told me the pains were not so severe, and that she was feeling very weak, which fact was corroborated by my own observation. Upon examination I found the head nearly ready to press on the perineum, but with little advance when the pains came on. I now made pressure on the abdomen with my left hand, while I took note of the progress of labor with my right. The first pain following the application of the hand to the abdomen was marked by a much greater degree of proficiency. From this time labor progressed rapidly; soon the head began to dilate the vulva, and in about forty-five minutes after the first pressure was made she was delivered of a fine healthy boy. The recovery was perfect, only somewhat tardy, as had usually been the case with her. I feel certain that this case would have required termination by forceps, if external pressure had not been made. Since then I have always used external pressure, if the case was in any way lingering, and I never saw any ill effects resulting that I could attribute to it.

Sometimes the patients will object an account of the severe pain it causes, but as the labor approaches its termination they are very glad to avail themselves of the assistance, frequently calling for it as a pain comes on. My usual way is to make pressure with the left hand, the woman lying in the usual left-side position, the right making all necessary manipulations until the last few pains, when sometimes I have the nurse or husband place both their hands upon the abdomen of the patient, while I use both of mine to support the perineum and deliver the head. I very seldom use forceps.

I will supplement the foregoing by two or three cases which were of considerable interest to me.

Case II.—Mrs. K., wife of a farmer, a stout, healthy-looking woman. When the husband engaged me for his wife's expected confinement, he expressed great anxiety about the event. This was to be her seventh confinement, all of which had been very severe. Forceps being used in nearly all. At the last, which had been a twin-pregnancy, the accoucheur attempted the use of forceps, but failing in that, he turned, both children being still-born. I was called at 8 A.M., June 19, 1876, and found the patient in labor. Upon thoroughly examining the pelvic cavity I found the superior strait to be very small indeed. I waited patiently till noon; still the head did not engage, with regular and powerful pains every four or five minutes. At 2 P.M. I decided that something must be done. I took a sheet, tore a strip about ten inches wide, the whole length of it, and put this around the patient as she lay on the left side, so that the two ends could be grasped from behind. The husband then took a sitting position on the bed with his feet (boots removed) against the hips of the patient, and grasped two ends of the wide bandage, the middle of which was smoothly applied to the abdomen of the patient. At each pain I directed him to make traction upon the bandage, thereby causing him to press the back and hips with his feet and the abdomen with the bandage, and between the pains to ease up a little, but still to hold firm enough to keep what was gained. The results were, in a few minutes, the head engaged, and in four hours the patient was safely delivered without forceps, child alive and vigorous, and the mother made a rapid recovery.

CASE III.—About midnight on May 26, 1877, received a request from my friend Dr. Barton, of an adjoining town, to come immediately with forceps to assist in an instrumental delivery. I found the head of the child low down, but Dr. Barton told me that no progress had been made for several hours. I at once applied external pressure, and during the third pain after pressure was made the child was born without other assistance, but it could not be resuscitated.

CASE IV.—This case caused me great anxiety. The lady having been under my immediate care during nearly her whole pregnancy, confined to her bed five and one-half months of that time, for the last four months not being able to leave her bed at all. She was anemic and weak, not being able to either eat or sleep, the stomach being alike intolerant of food and medicine. She was troubled with prolapsus recti, causing great distress at times. She had had seven children in rapid succession—in fact, was completely worn out by constant child-bearing and hard work. Every one despaired of her passing through her expected confinement. I was called by her anxious husband on the morning of July 27, 1877. I found labor had feebly set in. From the time I arrived pressure was constantly applied to the abdomen, decreasing between the pains, then increasing as they came on. By 1 P.M. a good-sized boy was born, and up to date the mother is doing nicely. In this case I think fully one-half the force which caused delivery was the external pressure.

JULY 30, 1877.

TWO CASES OF TRANSMISSION OF SYPHILIS THROUGH THE MALE ELEMENT OF REPRODUCTION.

BY
M. H. JORDAN, M.D.,
Birmingham, Ala.

THE evidence hitherto evoked on this subject has been insufficient to establish clearly the fact that syphilis could be transmitted to the female through the medium of the seminal fluids of the male.

As we find in the third volume of Ziemssen's Cyclopedia of Medicine, which is one of the latest works, and recognized as one of the highest authorities on syphilis, the question of the possibility of the female becoming infected with syphilis by the seminal fluid, "per se," of a syphilitic person, still to be "sub judice," we are warranted in coming to the conclusion that the profession have as yet formed no definite opinion on this subject. I propose in this paper simply to report a case that came under my own observation, and add one, in his own language, by Dr. J. C. Mobley, of Winnsboro, S. C., published in the October Number, 1875, of the *Charleston Medical Journal and Review*, and leave the question for my professional brethren to decide.

CASE I.—On the tenth day of last June, I was called to see

Mrs. J., seventeen years old, well developed, of full habit, and in perfect health all her life. She had been married about seven months, and was threatened with a premature labor. The patient was having regular pains at short intervals, and on examination the os uteri was found to be dilated to the size of a half-dollar, and the membranes broken, and the liquor amnii escaped. I told her that she was certain to be delivered soon, but gave her an anodyne, and left with instructions to notify me if the pains increased in severity. I did not visit this patient again until next day, when I found her in actual labor. After a lingering and somewhat tedious labor of about eight hours, she was delivered of a living male child, without any artificial assistance. The mother did well, got up in the usual time without any trouble, but the babe refused to nurse; it continuously uttered a moaning, husky cry, snuffled through its nose, and died in twelve hours.

On the 19th day of July, I was again called to see this lady, and found her with a coppery-colored eruption over the face and body, a severe iritis of one eye, attended with great circumorbital pain, and an intense sore throat. The lady positively assured me that she had had no initial lesion, at any time upon her genitals, nor swelling in the groins. I at once diagnosed secondary syphilis and prescribed accordingly. Her husband is about twenty-eight years of age, stout and healthy, and by occupation a railroad employee.

I invited him to my office in order to learn his history personally. He stated that whilst living in Montgomery, Ala., about a year and a half ago, he had a chancre, for which he was treated by one of the leading physicians of that city for several months, at the expiration of which time he was pronounced cured and discharged. He further stated that he had not felt any symptoms of the disease since leaving off treatment; and I was unable to find any lesion, either primary, secondary, or tertiary, anywhere on his person. The only way that I could account for this lady's condition was that her husband had syphilis—not manifestly, but it existed in his system potentially, latent at the time of impregnation, and communicated it to her without any primary lesion, and produced in her the symptoms of constitutional disease.

I placed this patient on anti-syphilitic treatment, consisting of one half-grain each of hydrarg. protiodide and pulverized opium, three times per day, until slight ptyalism was produced, then changed to the twenty-fourth of a grain of hydrarg. biniodide and ten grains of the iodide of potassium, three times daily. I also used a solution of atropia sulph. in the eye to ease the pain and prevent permanent injury (by adhesions), as a result of the iritis. Under this treatment the eruption rapidly faded away, the iritis got well, and the sore throat disappeared.

I submit this case, without any comments, with the one following by Dr. Mobley, and leave it to the profession to decide if the ladies alluded to did not become infected through the medium of the aborted fetuses.

CASE II.—I give in Dr. Mobley's own language.

"Capt. W. A. R., a young man about twenty-four years of age, came to me with a bubo, which had been lanced some time before, but was still suppurating, and showing no disposition towards healthy granulation. Under treatment, the bubo healed in a few weeks. Capt. R. was a highly intelligent gentleman, and candidly admitted that he had indulged in coition with a woman of the town, but that he had had no initial lesion of any kind; that he had been uneasy after his indulgence, fearing disease, had examined himself carefully every day, and in about three weeks suddenly discovered a swelling in the groin; he had been practising some gymnastic feats, and feared he was ruptured—not expecting a bubo, because of absence of initial lesion of any kind. Two doctors had worked faithfully and long to reduce this supposed hernia, and a third had very properly reduced it with a bistoury.

This patient was under my care, and seen every week or so for about eighteen months or so after the healing of the bubo; he became engaged to a most lovely and accomplished young lady, but assured me he would not marry until I thought that there was no danger from syphilis. During this year and a half no secondary symptoms of any kind were developed; and then I told him that as he was in apparently perfect health, he might marry if he chose, but I wished him to understand that I did not consider him absolutely safe; that I believed the majority, if not all, of the cases of constitutional syphilis were never absolutely free from its impress; and furthermore, that his case might yet prove to be a constitutional one, but that the chances were in his favor so far. He married, and in about three months I was called to see his wife after an abortion. To my great surprise, I discovered that her face, neck, and hands were covered with that well-known coppery secondary syphilitic eruption. In less than two months more she had almost entirely lost as full and beautiful a suit of hair—beautiful, luxuriant black curls—as I ever saw on woman's head; her health failed, she lost her rosy complexion, and was much enfeebled, despite unremitting care and active treatment. Within another year she had a still-born child of seven months. Now, this case admits of no doubt.

If she was not pure and undefiled when she married, then woman's virtue is a myth.

That her husband had no primary, secondary, or tertiary lesion, I am entirely convinced of. But he had the disease potentially. Deep in the mysterious recesses of his organism syphilitic poison lurked, all unseen by ordinary symptoms, to seize upon the vital principle, the seminal germs, and poison another creature in the act of giving it life; and still more, to inflict irreparable damage on the mother through her circulation."

CORRESPONDENCE.

PLAYFAIR'S SCIENCE AND PRACTICE OF MIDWIFERY.

BY

ROBERT BARNES,

London.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

LONDON, 31 Grosvenor Street, Sept. 24, 1877.

SIR:—In your journal for January last (1877) is a memoir by Dr. Reimann, of Kiew, "On the Simultaneous Entrance of both Heads of Twins into the Pelvis (*with two wood-cuts*)." The opening paragraph runs thus: "None of the older text-books on obstetrics mention the fact that both heads in twin labors may occasionally enter into and occupy the pelvis at the same time, and only a few of the more recent writers on the subject, such as Braun, Hohl, Chailly-Honoré, Meigs, and Joulin, refer to the possibility of such an occurrence."

I need not stop to point out how far this is from being an adequate representation of the actual state of obstetric literature. It will be enough here to call to mind that the varieties of this complication are fairly pointed out in Ramsbotham, whose book was published many years ago. An author of his mark and authority ought not to be overlooked by any one who is studying a practical point in obstetrics. Again, in the best of recent English text-books (Leishman's), this complication is carefully portrayed; and it was described from observation by pen and pencil in the first edition of my "Lectures on Obstetric Operations," published in 1870. Reimann appears entirely ignorant or neglectful of English authors.

But the thing that startled me most in Dr. Reimann's memoir was the seeing it illustrated by two wood-cuts, representing the varieties of head-locking, "*from Playfair!*" Now, these wood-cuts are very old acquaintances. They are my own production, and are actually engraved in the "Obstetric Operations," 1870, in the two subsequent English editions, and in the French and Norwegian editions. I am informed that they are not in the American edition. I have never seen a copy of this edition. I never sanctioned the publication of it. This fact, and the omission of the illustrations in question, justify me in disclaiming it as a spurious production.

But how did these wood-cuts become "Playfair's?" This is a matter which, in the interest of medical literature, it is important to explain. This is the explanation: Dr. Playfair, in the preface to his book, thus sets forth his creed and practice: "Many of the illustrations are copied from previous authors. The following quotation from Tyler Smith's 'Manual of Obstetrics' will explain why the source of the copied wood-cuts has not been in each instance acknowledged: 'When I began to publish I determined to give the authority for every wood-cut copied from other works. I soon found, however, that obstetric authors of all countries, from the time of Mauriceau downwards, had copied each other so freely without acknowledgment as to render it difficult or impossible to trace the originals.' "

Even the genius of Tyler Smith cannot consecrate wrong. Is it decent to plead ignorance as an excuse for appropriating the property of others? Ought not an author to take some trouble to find out the owners? Dr. Playfair's is the creed of the humorous French plagiarist: "Le bon est mon bien que je réclame partout."

But even the plea of ignorance, backed by indolence, will not cover such a case as provokes the present remonstrance. Dr. Playfair, when constructing his book, wrote to ask me for the blocks of several of my illustrations. Amongst these are the two innocently assigned to him in Dr. Reimann's memoir. I cheerfully acceded to the request; but assuredly I never dreamed of thus conveying to him my right of authorship.

This reclamation will, I trust, be useful by proving, by a flagrant example, what wrong may be done to original workers by compilers who neglect the plainest canons of literary morality.

Yours very truly,
ROBERT BARNES.

P. S.—I am informed by Dr. Reimann that the wood-cuts were not inserted by him, but by the editor. I am happy to acquit Dr. Reimann of all blame. But you, Mr. Editor, will, I hope, pardon me for urging that the fact of *your* being deceived into the belief that the wood-cuts were Playfair's (doubtless because you possess the American, in which those cuts are omitted, and not the English edition of my book), greatly strengthens my argument, and the necessity for this reclamation.

R. B.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Reported by MATTHEW D. MANN, M.D., Secretary.

Stated Meeting, May 1st, 1877.
The President, DR. T. G. THOMAS, *in the Chair.*

DR. CHAMBERLAIN presented a specimen of

AN ACEPHALOUS FETUS.

THERE was entire absence of the vault of the cranium. There was also exophthalmia, double hare-lip, and cleft palate. The child was living, the heart beating, but there was no attempt at respiration. The head presented. The body was perfect, the lower extremities being even larger than is usual in a new-born child.

DR. LUSK read the history and presented the specimen from a case of

VILLOUS DEGENERATION OF THE UTERINE MUCOUS MEMBRANE.

"Sarah M., single, æt. 40, admitted to Bellevue Hospital March 22d, 1876. Menstruated at fifteen, was never pregnant. The menses were regular to within two years previous to admission. The flow then became profuse, and was accompanied by pain. A yellow watery discharge existed throughout the intermenstrual period.

On admission, the patient was sallow and somewhat emaciated. The uterus measured three and one-half inches in depth. Patient had severe expulsive pains, and some bloody discharge. Finding the os externum extremely small, I incised it bilaterally preparatory to exploration of the uterine cavity.

On April 27th, as I was making an examination of the patient, the finger passed readily into the cavity of the uterus, and detected the presence of what appeared to be soft polypoid growths. On the 11th of May, Dr. I. E. Taylor saw the patient with me in consultation, at which time both of us coincided in regarding the case as one of sarcoma. The intra-uterine growth at this time had the feel of a soft pulpy body, occupying the left corner and side of the uterus. The patient had a cachectic look, a watery discharge, and suffered from severe lancinating pains, requiring large doses of morphia to procure relief. On the 18th of May, Dr. Taylor removed the mass by means of the curette. This relieved the discharge for a time, but did not affect the pain.

On the 21st of September, on returning to duty at the Hospital, I found that the growth had returned, and was once more occasioning distressing hemorrhage. I therefore repeated the operation performed by Dr. Taylor, with similar results, viz., the arrest of hemorrhage, but with speedy recurrence of pain and watery discharge, and progressive cachexia. Now it so happened that during the year I had had a case of endometritis polyposa under observation, which had been pronounced by a number of physicians to be one of sarcoma uteri. The recovery of the patient, however, negatived the latter diagnosis. This induced me carefully to examine the literature of the subject, the result of which was, that I was led to regard the Bellevue patient as a typical case of sarcoma. Ascites, occurring later, served only further to corroborate this opinion, as I regarded the fluid to be due to a chronic form of peritonitis, resulting from the progress of the disease. Tapping was resorted to, but death soon followed (March, 1877). The autopsy showed complete cirrhosis of the liver, and the condition of the uterus seen in the specimen offered plainly a case of endometritis polyposa.

Possibly the microscope might have settled the diagnosis earlier. But I did not send the scrapings to be examined, as, in the case already referred to, three skilful microscopists furnished three different opinions as to its nature.

In this instance the diagnosis was chiefly based upon the recurrence of the morbid growth, and the rapid deterioration of the health, which was not accounted for by the amount of uterine discharge. The error arose from overlooking the condition of the liver, owing to the patient referring all her sufferings to the uterine organ."

The specimen was referred to the pathologist, Dr. Mann, for examination, and at a subsequent meeting he made the following

REPORT ON DR. LUSK'S SPECIMEN.

"The specimen is one of extreme interest both clinically and pathologically, no such case having been described by any author with whom I am familiar.

The specimen, as it came into my hands, consisted of the uterus and appendages. The uterus was found to be very much enlarged, it being about five inches in length, from the os externum to the top of the fundus in a straight line. There were evidences of old pelvic inflammation; the ovaries, which were a little enlarged, being bound down and fixed quite close to the body of the uterus. On opening the uterus it was clearly shown that the cervical portion had undergone atrophy, while the body was greatly hypertrophied and enlarged. The walls being about one inch in thickness, very firm and hard. The cavity of the uterus was much enlarged and found to be filled with a new growth. Most of this new formation consisted of very soft, pulpy, shaggy masses, lying side by side, and seeming to spring from the whole surface of the lining membrane. Besides these masses there were a few long club-shaped polypoid growths which also seemed to spring from the mucous membrane. These were attached by very long slender pedicles, and hung down a considerable distance into the cervical canal, which seemed to be somewhat dilated. By the freezing microtome a number of fine sections were made of the pulpy masses for microscopic examination. They were found to consist of single or branched connective-tissue bodies, or villi, very slender and easily broken, grouped together and covered with a layer of easily detached epithelium. This epithelium approached very nearly the cylindrical type, but was not perfect, having a tendency to become rounded. The more solid polypoid growths consisted of connective tissue, of the same character as that making up the other growths, and seemed to be either an hypertrophy of one or a coalescence of several of the previously mentioned villi. There were no traces of any gland tissue, or of the so-called decidual cells, even in the small spaces where the villous growths were not seen. The muscular tissue in these places was covered by a layer of connective tissue, very rich in small round cells. The villi all seemed to spring directly from the muscular tissue.

Villous growths of this character are found generally in mucous membranes, normally possessed of villi; but are also met with in other situations—for instance, in the bladder and vagina. Their occurrence in the mucous membrane of the uterus must certainly be very rare, and the difficulty in making a diagnosis in a case of this kind cannot be overestimated. The microscope would, however, have shown the true nature of the affection, though the rarity of the disease in this locality, and the difficulty of making sections of such very soft, friable bodies, would doubtless have added much to the difficulties in the way of a satisfactory examination."

Dr. Pallen showed an

INSTRUMENT FOR MAKING INTRA-UTERINE INJECTIONS.

It consisted of a fine tube, to one side of which was attached a watch-spring, so arranged that on turning a milled head in the handle, the spring was forced away from the tube, thus giving a clear space for the return flow, the fluid having been injected through the tube.

Dr. Pallen said that he used it for making applications or for injections of hot water to the uterine cavity. He used as much as four pints of water at a temperature of 102°–104°. As a result, the tissues became blanched. It was particularly applicable to old cases of chronic metritis.

Dr. Noeggerath remarked that the same or a similar instrument had been invented both by Dr. Sims and later by himself. The instrument was wanted when there was a difficulty in keeping a passage for the reflow, that is, when the os internum contracted forcibly; but in such cases the spring is not strong enough to keep the os open when any irritant is used.

He did not consider that the fact of a non-return of the fluid was the cause of the bad symptoms following intra-uterine injections. The cause was not as yet fully explained. It might be some peculiarity in the substance injected. There are some substances which can never be safely injected, such as iron, chloride of zinc, and nitrate of silver. For purposes of intra-uterine irrigation the instrument might be very useful.

Dr. Byrne said that he had injected the uterus over 2,000 times. He had had no fatal cases, and very little trouble of any kind resulting. He has a very simple instrument to secure the reflux. A No. 10 catheter has a piece cut out of one side about four inches in length, commencing a quarter of an inch from the end. In this catheter he has a fine silver tube for the influx. In order to prevent stoppage of the tube, he finds it necessary to move it backward and forward. He agreed with Dr. Noeggerath, that certain things should not be injected. Chloride of zinc he thought to be the worst, and nitrate of silver next. Even warm salt and water had given trouble.

Dr. Skene said he had invented an instrument for the purpose, but it had not proved practicable. He always found much trouble to follow intra-uterine injections; uterine colic and pelvic peritonitis being not uncommon sequelæ. The instrument which he used at present was a glass tube with a nipple in the end, but this was open to the same objections as the other instruments, and produced about the same results.

Dr. Noeggerath exhibited some

INSTRUMENTS FOR OPENING INTO DOUGLAS' CUL-DE-SAC,

and made the following remarks: We have frequent occasion for opening into the cul-de-sac, for opening cysts and abscesses, removing solid tumors, etc.

For the treatment of cysts there are several methods in common use. Incision is the oldest, but it is found difficult to stop hemorrhage after it.

The next method is the use of the trocar for opening and emptying the cyst. This method is not dangerous, but is ineffective, as the cyst generally refills and the orifice closes. Another method is by using the trocar and canula, and leaving the canula in the cyst cavity. This method presents several dangers, as peritonitis might ensue. Still another method was by aspiration and injecting carbolic acid, but this often fails. We are therefore driven to adopt the trocar and to invent a trocar which would make an opening which would not close, and from which there would be no danger of hemorrhage. This he has done. The trocar is pointed, and increases gradually in size. By this the tissues are torn, and do not bleed. Again the double hook can be passed by a groove like a director in the outside of the curve of the trocar, and the opening increased by stretching.

Dr. Noeggerath also read a paper on

THE COMBINED APPLICATION OF THE ELECTROLYTIC AND ELECTRO-CAUSTIC EFFECT OF THE BATTERY IN THE TREATMENT OF CANCER,

and made a practical demonstration of his method.

"Among the various means that have been employed to treat cancer of the uterus, the galvanic cautery ranks among the foremost, and I have had frequent occasion in former years to present to the Society specimens, the seat of carcinomatous degeneration, which had been removed by the cautery. My views as to the advantage of this method over the operation by the knife have been so often stated here, that I deem it unnecessary to repeat them on this occasion. Without being able to give any number of cases large enough to be of statistical value, I will state that, where I had occasion to watch the progress for years, the result has been found to be satisfactory. I am speaking now of those instances where the entire mass that had been invaded by the disease could be removed.

It was only a few months ago that I presented a specimen obtained post-mortem, where no trace of the disease could be found in the neck, the posterior lip of which had been amputated three-quarters of a year after the operation.

I have, however, become convinced that, occasionally, even where the whole of the infiltrated portion could not be removed, the effect of the heat developed by the galvanic cautery was apt to influence the constitution of the tissue in its immediate vicinity. In a case where I operated some years ago for Dr. Thomas, and in the presence of the late Drs. James L. Brown, I found, about eight weeks after the operation, a spot in the supra-vaginal part of the neck which looked evidently like a portion of the disease that had not been removed, and which remained uncovered by epithelium, while the rest looked healthy and perfectly smooth. I intended to perform a second operation two weeks later, when I found that the granulating surface had diminished in all directions, and disappeared entirely so as to leave no trace of its existence.

Still, the number of cases that we are called upon to treat, where the disease has not extended beyond the infra-vaginal neck, or to part of the vaginal septum, are so rare, that the operation of removing the neck only is a very limited one. We have been in the habit of applying the galvanic heat by means of platina cauteries, after the amputation, to those parts which were found to have an unhealthy appearance. The instruments used were either curved knives or broad steel wires. In this way we attempted to scoop out or to simply destroy by the direct touch or the radiating heat the remaining unhealthy structures. It has been often stated, and is believed by some of the prominent gynecologists of the present day, that, in those cases where we fail to destroy the entire area of disease, the irritation consequent upon the process of cauterization was apt to hasten the fatal result. My experience has not yet permitted me to agree with this view. On the contrary, I have seen that the direct effect of the cauterization was cessation of pain previously existing, and checking of hemorrhages for a long time afterwards, thus preventing too rapid wasting from these two sources at least. Furthermore, every case of cancer does shape a course of its own, and I do not comprehend by what means the duration of the disease in a given instance could possibly be judged either before or after the operation. All we know is, that the average duration of life from the time we recognize the disease up to the final destruction of the patient is about twenty months.

The amount of success in the operation for cancer of the uterus, among the surgeons who perform this operation, most necessarily varies very much according to the individual views from which one or the other shapes his indications. In general we may say that the more operations a surgeon performs, the more unfavorable will be his statistics regarding a radical cure.

With the majority of physicians of the present day, the recognition of the fact that the infiltration passes beyond the vaginal insertion, is an indication against the performance of an operation. I have adhered to this principle up to the last two years, but have since abandoned it in those cases where there was a very rapid development of the growth, or profuse and frequent hemorrhages.

Very lately, however, I have gone farther. and attempted to modify the use of the electric cautery in such a manner as to make it available in cases that have heretofore been considered beyond the means of surgical art.

The great object to be obtained was to carry the heat far into the depth of the tissues and concentrate it upon a small surface, in order to guard the neighboring healthy tissues.

The methods hitherto used had certain disadvantages. The cauteries, if heated even by our most powerful batteries, could not be pushed into the tissues beyond a certain depth, because the eschar itself prevented their further progress, and because the instrument lost its heat while it penetrated through the moist tissues. I have found that, even when I started with a cauterizer at white heat, it was soon arrested by its own action on tissues and by that of the tissues on itself.

But since the instrument has to be heated to the utmost degree it develops enough radiating heat to make its application dangerous to neighboring organs, the vaginal septa, or the uterine tissue adjacent to the peritoneal lining. I therefore attempted to bring the two conductors of the battery in contact with a thin platina needle; but I soon found out that it could not be heated, and even when I used the two batteries at the same time I failed to develop sufficient heat in a needle long enough for all purposes.

The next step was an attempt with a platina wire bent upon itself in such a manner as to resemble somewhat a needle in its shape. The heat, of course, could now be developed satisfactorily, but when I attempted to penetrate with it the infiltrated tissue, it cooled at the apex, while the heat accumulated in the centre, where it became pliable, bent upon itself, and cauterized parts which I intended to keep uninjured.

Upon experimenting further, I found that I could heat sufficiently to all purposes the points of two long platina needles by using the interrupted current of the platina-zinc battery now generally used for cauterizing purposes. The interruption of the current is simply effected by rubbing the points one over the other, the inequalities of the roughly polished metal being sufficient to open and close the current.

The heat developed thus instanter has the great advantage over the usual way of heating platina instruments, that it loses very little of its intensity even in cold water, and thus I am enabled to keep it up in the depth of moist tissues any desired length of time.

But in attempting to introduce these long, slender needles into the tissues I found that they penetrated only the very softest portion of the cancerous mass; but in those places where the disease had only just commenced to develop, and which were just the points I intended to reach, the needles were arrested by the density of the tissue and began to bend.

In order to overcome this difficulty I then proceeded to attach the needles to an ordinary constant current battery with a view of calling in aid its electrolytic properties, and I thus succeeded in penetrating with the greatest ease the densest tissues. I further employ the electrolytic process to destroy the tissue intervening between the two points after both have been introduced. As soon as I feel that the metallic contact between the two points is obtained, I remove the constant current battery and apply the wires of the caustic battery, when heat is developed instanter. The great advantage of this proceeding consists: 1st. In the fact that the instruments, while cold, can be carried with the greatest nicety to the points which I want to destroy; 2d. That the heat is restricted to a small compass; 3d. That it is not cooled off by the moisture in the tissues, as is the case with all our other cauteries.

This method is, of course, not restricted in its application to cancer of the uterus, but to all those cases where we want to destroy by heat small growths in the depth of organs or tissues."

Stated Meeting, May 15, 1877.

The President pro tem., DR. J. BYRNE, *in the Chair.*

The

DISCUSSION ON DR. NOEGGERATH'S PAPER,

laid over from the last meeting, was first taken up.

DR. BYRNE made the following remarks:

"I have listened with great interest to the novel, and, I think, very valuable hints and suggestions of Dr. Noeggerath touching the galvano-surgical treatment of certain forms of cancer of the uterus and adjacent parts.

The remarks of the author of this paper reminded me very forcibly of a circumstance that transpired at the Centennial Exhibition on a certain occasion in the early part of last summer. A meeting, composed of the judges in a special department, and a few distinguished European and American scientists, including his Majesty the Emperor of Brazil, Sir Wm. Thomson of Glasgow, and others, and at which I had the honor to be present, took place in the "Main Building." The object of this meeting, which was to some extent a private one, and which, for obvious reasons, occurred on Sunday, was to examine and test various apparatus connected with physical science. A gentleman present having finished his demonstration of the practical working of a certain invention, and having explained the *modus operandi* by which unlooked for and remarkable results were obtained, Sir Wm. Thomson said to him: "I have been greatly delighted, sir, and edified at what you have shown us, and yet I cannot help expressing my great surprise to think that a means so simple, and yet in accordance with certain laws and principles so well understood, should not have been conceived or devised long ago."

Though the purport of Dr. Noeggerath's paper was mainly to describe his new method of utilizing the combined electrolytic and thermal powers of the voltaic current, yet he takes occasion to refer cursorily to two subjects connected with galvano-cautery generally, and which I conceive to be of sufficient importance to notice. On one of these questions, at least, namely, as to the fallacy that cicatricial disfiguration is a frequent consequence of these intra-vaginal cautery operations, his views are already familiar to members of this Society. Nevertheless, I am glad to hear him reiterate them, not so much because they happen to be in entire conformity with my own observation, but because opinions based upon his large experience are not to be ignored on any mere theoretical grounds, however plausible.

The other matter briefly alluded to in this paper, and to which I would also call attention, is the prevalent opinion that surgical operations for uterine cancer, especially if the diseased parts be not entirely excised, but hasten the fatal issue. Whether as regards patients who may have been operated upon for uterine cancer by means other than the electric cautery, and more particularly when the whole disease had not been extirpated, such views may have some application, I am not prepared to say, but, *a priori*, I can see no good reason why it might not be so.

It does seem to me, however, that what we are in the habit of accepting as substantial opinions and conclusions regarding this and kindred questions, based as they are, for the most part, on the delusive statistics of cancer, are but theoretical speculations at best, and, therefore, neither trustworthy nor logical.

At all events, there is but little, if any, similarity in the condition and subsequent reparative processes of parts acted upon by electro-cautery and those which we believe to take place in tissues divided or wounded by other means.

For this, if for no other reason, I am of the opinion that certain doctrines and stereotyped notions regarding an increased tendency to the redevelopment of cancer in parts operated upon, can have no application whatever to organs and tissues subjected to the influence of the galvanic cautery. The statistics of mammary cancer, for example, can, surely, have no bearing upon the consideration of this question.

With regard to the main proposition of the author of this paper, namely, that the combined or rather alternate cauterizing and electrolytic qualities of the galvanic current may be safely and profitably utilized in the destruction of deep-seated infiltrations, where the large amount of radiated heat from instruments ordinarily used for cauterization would be dangerous to adjacent parts, I cannot, of course, speak from practical knowledge of the subject.

There is not the least doubt in my mind, however, that the principle is a sound one, and, if carried out with due regard to certain physical laws, must prove of immense value in a numerous class of cases such as cancerous infiltrations in the recto- and vesico-vaginal septa, the obliteration of nevi, etc. At the same time, if we would hope to accomplish the objects proposed with any degree of thoroughness and satisfaction, and in strict accordance with the aim of the originator of this novel method, a very important modification of the needles to be employed will be found to be indispensable. Hence, as I said before, certain laws applicable to the peculiar qualities of a voltaic current, and consistent with well-known phenomena, must be strictly observed. For example, no long single platinum needle interposed *transversely* between the conductors of a galvanic battery, however powerful, can be rendered incandescent, and such needle cannot be utilized either for cautery or any other like purpose. Under such circumstances the current in passing through the conductors meets with little or no retardation at the point of junction, and where there is no retardation there can be no heat. Secondly, when two platinum needles connected with the conductors of a battery are brought into contact, even under water, though a spark appears, it is the spark of alternate approximation and separation, and not of contact. If the points of these needles could be maintained in sufficiently close juxtaposition, and yet not in contact, we would obtain the phenomena of light and heat by a miniature voltaic arc, but the sphere of its action would be infinitesimally small; hence, it is not from this source we are to look for cauterization in such cases as we are now considering.

Thirdly, when the needles are brought together, every instant during which contact is maintained, an amount of heat is generated not alone at the point of contact, but distributed, though to a lesser degree at the very outstart, throughout the entire length of each needle. But, it may be argued, that inasmuch as contact is not to be kept up for any length of time, but broken and renewed frequently, this very excess of heat for a limited distance from the points and resulting from the more intense molecular polarization in this particular part of the circuit, is precisely what is wanted.

In reply, however, I would simply state that as the heated ends of the needles are instantly cooled by the moisture of the tissues, and, as each time they become so, they offer, for the time being, less resistance to the current, it must undoubtedly be found that after this repeated heating and cooling has been kept up for a little while, parts of the needles, not in contact with the tissues, will attain a higher temperature than those within.

Indeed, what is observed in the attempt to penetrate tissues to any great depth by a wire bent upon itself, and, however pointed, is to a certain extent an illustration of the correctness of these views.

For these reasons, therefore, I would suggest that needles for this purpose be made of silver or pure copper up to within say half an inch or more or less, according to the particular case in which any pair may be required. The platinum ends can be attached by gold solder, and will be found to be perfectly secure. I would also suggest that these platinum points be made somewhat flat, dagger-shaped, or otherwise so fashioned as to penetrate dense tissues without difficulty.

Finally, as to their introduction: if an electrolytic effect should be deemed essential to their more ready insertion, it will be found that the improved four-cell battery, such as that exhibited by Dr. Noeggerath, and which I now employ exclusively for galvano-cautery operations, will, when half immersed, produce a very powerful electrolytic effect, and thus render unnecessary the employment of a second apparatus.

This, however, I do not deem essential because, if needles of various sizes are made as I have suggested, there can be no great difficulty in their introduction, nor do I see any valid reason why they may not be passed into the densest fibrous mass without the aid of electrolytic disintegration of tissues and without the loss of one drop of blood. In conclusion I think I but express the unanimous sentiments of all present, when I say that not only this Society, but the profession at large, must feel deeply indebted to the author of this paper for his ingenious and valuable outline of a new departure in electrosurgery."

Dr. Dawson remarked that Dr. Noeggerath's objections to the deep introduction of the cautery needles might be overcome by repeatedly withdrawing the needles, reheating them and then reintroducing them. In this way they might be made to penetrate a distance of 1″ or 2″ or more.

Dr. Noeggerath said this plan would work in soft tissues, as in a nevus, but in the hard, dense tissue of a uterine cancer it failed. So this was one reason of his introducing his new method. Another reason was the great advantage which might be derived from introducing the cold needles. If they happened to be pushed too far, they might be withdrawn without doing any harm. This was especially advantageous in the recto-vaginal or vesico-vaginal septa where the finger, in one of the three cavities implicated, could tell exactly where the needles were and so avoid doing any harm.

Dr. Byrne suggested that to prevent the heating of the part of the needle not enveloped in the tissue, it should be enveloped in wet lint.

Dr. Jacobi read a paper on

THE INFLUENCE OF MENSTRUATION, PREGNANCY, AND MEDICINES ON LACTATION.[1]

Dr. Jacobi also showed a specimen of

A PHOCOMELUS WITH INSUFFICIENT DEVELOPMENT OF OSSEOUS TISSUE,

and made the following remarks:

"The specimen here presented is a phocomelus, that is, a monster in which there is insufficient development of one or both extremities. In the highest degree of this monstrosity only the hands and feet are developed, there being the first parts of the embryonic extremities to be formed. They begin to grow about the end of the second week of intra-uterine life, and at first may have, according to some, eight, nine, ten, or eleven fingers or toes; so that polydactylism results from a remaining intact of the original finger, a failure of development, and not from a development of new ones.

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[1] See this Journal for July, 1877, Vol. x., No. 3, p. 353.

In a phocomelus we must look for the cause of the monstrosity not in any disease of the vessels or in embolism, for the vessels follow and do not precede the formation of new tissue, but rather in a lack of proper tissue-building material. In this specimen the hands and feet are well formed, the legs and fore-arms are short and bent, showing that the muscles have had an undue influence on their shape. The muscles are, however, very small and poorly developed, so that their actual power is extremely small; but the bones are so soft and cartilaginous that even these delicate muscles are able to bend them. There is almost no true bone-tissue anywhere in the fetus, although it had nine months of intra-uterine life. There are a few bony points, as at the angle of the jaw and in the clavicle. The cranium is thick and elastic, containing no true bone-tissue except at points in the parietal and occipital bones. The adipose tissue is immensely developed throughout the whole body. This excessive development of fat is met with in acephalous and acardiac monsters, and is a result of a scanty or venous blood-supply. In this case it corresponds with the general low state of nutrition and development."

Stated Meeting, June 5, 1877.

The President, Dr. T. G. Thomas, *in the Chair.*

Dr. Lusk related the history of two cases, with specimen from one, of

DEATH FOLLOWING THE USE OF THE ASPIRATOR IN OVARIAN TUMORS.

The *first* case was a patient who entered the hospital with a tumor extending from the pelvis to the umbilicus. There was fluctuation both externally and by the vagina. The cervix uteri was pushed forward so close to the symphysis pubis that a sound could not be passed into it. A trocar was passed through the abdominal walls and only urine withdrawn. The diagnosis then lay between hematocele and ovarian cyst. The needle of an aspirator was therefore introduced through the vagina into the tumor and a bloody fluid withdrawn. After this the sound was passed five inches into the uterine cavity. The tumor soon refilled and twenty-four ounces of fluid were again removed by an aspirator passed through the abdominal walls, but in two days the patient died of peritonitis.

No *autopsy* could be obtained; but a knife was passed into the tumor per vaginam and a quart of blood withdrawn. A knife was also passed into the pelvic tissues at several other points besides the tumor, and about the same amount of blood withdrawn. This latter must have issued from the abdominal cavity. The tumor was also withdrawn and found to be an ovarian cyst.

The *second case* was a simple ovarian cyst. It was tapped, and in two days the patient died with all the symptoms of peritonitis. No autopsy. In both cases a small aspirator needle was used.

Dr. Thomas remarked that for some time past they had had very bad results when operating for ovariotomy at the Woman's Hospital. The aspirator needle had, however, been used constantly during that whole time without any ill effects. He had seen only one case where bad results followed the use of the needle, and that was in a case where electrolysis had been undertaken. Here the needle was kept in for four minutes; the temperature rose soon after to 104°, and remained so for a long time. An operation was therefore done two weeks afterwards.

The rules he adopted were always to use the smallest needles through which the fluid will pass, to disinfect the needle with carbolic acid, and to send the patient to bed for a day. Dr. Thomas also stated that he was in the habit of using the aspirator a month or so before ovariotomy in order to give the patient a chance to improve in her general health.

Dr. Mundé reported a

CASE OF ASPIRATION OF AN OVARIAN TUMOR, FOLLOWED BY INFLAMMATION OF THE CYST AND PERITONITIS.

A small needle was used, but within three days pain, tympanites, and subacute peritonitis set in. Ovariotomy was performed, but too late to save the patient, who rallied somewhat for a few days, and died under septicemic symptoms on the sixth day.

Dr. Mundé presented for Dr. W. H. Studley a

NEW PROBE-POINTED HYSTEROTOME,

of which the following is a description in the words of the inventor:

"The instrument to which I would call attention is a simple round probe, some two and a half inches in length, and one-tenth or one-twelfth of an inch in diameter, armed with a blade about an inch in length, from a tenth to a twelfth of an inch in depth, and situated about midway between the probe's ends. This bladed probe is held by a simple spring clasp,

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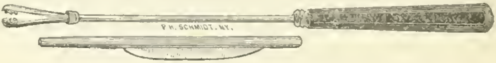
[1] See Amer. Jour. Med. Sc., January, 1878.

which is governed as to its opening and closing by a sliding ring on the clasp's shaft. It can be placed at different angles to the shaft, according as desirable.

This is all. The accompanying cut will doubtless give a better idea of the instrument than any description by words. The merits claimed for it are:

1st. That it has all the advantages of a simple probe, whereby it can traverse easily and unmistakably the cervical canal from the os externum to and through the os internum, combined with all the advantages of the simple knife, minus the disadvantages of the latter in the way of encountering tissues before it can enter the internal os.

2d. It affords a broad back to the blade whereby some danger at least is prevented from burying the latter too deeply into the tissues, while in addition, if this be not sufficient, the projecting probe end (being some three-eighths to a half-inch in length) affords an effectual barrier against such a danger in the region of the os internum, especially inasmuch as in that locality the cutting takes place as the blade is thrust *into* the uterine cavity, and the probe-point going before it precludes a possibility of the incision being inordinately deep.



3d. It can be easily rotated in the groove of the clasp which holds it to any degree of a circle without touching the clasp's ring for readjustment, and hence longitudinal incisions can be made at any angle in the cervical tube without appreciable delay or trouble. In short, it has all the advantages of the ball-and-socket-joint without its disadvantages—the latter being unable to hold the blade firmly.

4th. It is light in weight, extremely simple in its construction, and, above all, cheap in price."

Dr. Blake exhibited the model of the tumor in a

CASE OF SPINA BIFIDA.

The child has passed the fifth year, is strong and bright, though there is certain lack of innervation in certain muscles of the legs. She can stand and move, but not walk.

The *treatment* had been by graduated pressure. The effect of this was to sustain the sac and to prevent any stretching of its walls. The sac is now much thicker than formerly, principally by the addition of a large layer of fat. The cases which have grown up have mostly been treated in this way.

Dr. Blake mentioned having heard of one adult with this trouble who suffered only from a loss of power over the bladder and rectum.

Dr. Chamberlain said he knew of one case, seven years of age. He could stand, but not walk.

Dr. Thomas mentioned a case where there was a want of development in the anterior wall of the sacrum. Dr. Emmet had the case in charge. He found the tumor in the pelvis, tapped it, and the patient died. (The case was published by Dr. E.)

Dr. Chamberlain read the history of a

CASE OF PUERPERAL EMBOLISM OF THE CEREBRAL, SUPERFICIAL, AND PULMONARY (?) CAPILLARIES.

Kate D., a well-developed and healthy girl of 18, after a normal gestation and labor, was naturally delivered on the 15th of March. The child died twenty-four hours later.

In the first days of confinement there was a marked febrile movement. Temperature rose to 105°.

Puerperal fever occurred in the ward, and there were several severe cases. In consequence all the patients were removed on the eighth day after her delivery.

In her case, however, involution of the uterus proceeded rapidly; there were no offensive lochial or other discharges. Only an unusual amount of pain and tenderness in the hypogastric and iliac regions indicated uterine mischief.

A moderate cystitis developed by the eighth day and continued for a week. There was also rapid respiration, cough, and bronchial râles, with a somewhat cyanotic flush upon the face. Neither history or physical signs of any cardiac disturbance.

The temperature, however, gradually fell from 103½° on the 3d day, to 99° on the 9th day. On the 10th day there was a severe chill, and lesser rigors on the 11th and 12th; the temperature rapidly oscillating between 99° and 105°.

This was not due, however, to active uterine disturbance, for the womb could hardly be found above the pubes, and the abdomen was unusually retracted.

Her appearance was rather that of a patient in the second week of a severe typhoid fever: face dusky and flushed; tongue brown and dry; skin hot and moist; mind dull and wandering, with moments of delirium and transits of hysterical mania.

The bowels had been moderately free; the urine, somewhat scanty and high colored, showed a little albumen, but not more than a declining cystitis might occasion.

The action of the heart grew slow and feeble, the mind more obscured, the movements of the left side of the body progressively restricted, and on the morning of the 15th day there was complete hemiplegia of the left side.

Temperature ranging between 102° and 99°. Pulse between 40 and 130. When entirely undisturbed it was very slow, but on lifting her arm it would rise rapidly. Pupils rather fully dilated. She was not sufficiently conscious to tell us of the amount of vision. The fundus oculi was not examined (as it should have been).

She remained for three or four days in a very critical condition, when it was observed that bullæ were forming in various places on her lower limbs. Thus, such appeared on the dorsum of either foot, at its inner border; several along the shin; the skin of both heels became black; a carbuncular area appeared on the left nates on its outer aspect. Some of these may have been determined by pressure; but some, as for example that on the outer surface of the nates, which was much the largest, were certainly not due to such cause. Death was expected, but did not occur. No new bullæ formed, and a line of demarcation formed around those already present. The heart gradually regained rhythm and force. Intelligence slowly returned—and all her functions. Stay in hospital was prolonged by the slow filling up of the cavities formed by the suppuration of the gangrenous tissue, but she was finally discharged well—six weeks after delivery.

There can be no doubt that the necrosis of the surface was determined by infarction of the vessels.

There can be little doubt that cerebral areas were in like way rendered atrophic, and perhaps compressed by gorged and stagnant circulation.

The same explanation will suffice for the dyspnea, bronchitis, and feeble heart.

Accepting then, comprehensively, capillary embolism as the cause of the phenomena, the question returns, what were the embolia, and what their origin? Some abundant source certainly, since pulmonary, systemic, and cerebral circulation were all involved. There was no evidence that there were any cardiac vegetations to be swept into the blood-current.

If it is assumed that the coagula of the uterine sinuses were moved up through the iliac veins, we have also to assume that they passed through the right heart, and traversed one set of capillaries in the lungs to be arrested in another set in the brain and integument. It is said that Rindfleisch and others have demonstrated that small coagula may be forced through the pulmonary capillaries. I am not aware that when thus extenuated they have been known to be afterwards arrested in another set of capillaries.

There is another answer to the question which, though purely hypothetical, seems to me more probable.

Notwithstanding suppressed lactation, there was rapid and complete uterine involution. The patient lay for eight days in an intensely septic atmosphere.

She herself showed in her fluctuating extremes of temperature, sweats, and physiognomy evidence of the septic process.

Her blood then was thick with fat and fibrine and myriads of molecular germs; heavy for a feeble heart to move. Viscid, apt to cohere and stagnate.

To this magma of fat, fibrine, and protoplasmic germs I trace the embolism. This case was treated with ergot and sulphocarbolate of sodium and quinine. Digitalis, which I think was indicated, was not employed.

Dr. Lusk remarked that this case was so like many which he had seen where there was diphtheria of the uterus, that he felt sure, if this membrane had been looked for, it would have been found, together with a large number of bacteria. Again, a very feeble heart would have accounted for many of the symptoms, and thrombi for others. In such cases bacteria are found in multitudes in the kidneys, although none may have been detected in the blood, the kidneys having acted as a filter.

Dr. Chamberlain replied that other cases in the hospital at the same time were found to have diphtheritic patches.

Dr. Thomas also made the following remarks: "I cannot accord with Dr. Chamberlain in his view of the pathology of this case, nor can I see why any special theory should be invoked for the explanation of phenomena which we frequently meet with, and which bear a simpler and more rational interpretation. There are two questions which I would ask of Dr. Chamberlain before offering the explanation of his case which I propose: First, was a portion of the blood withdrawn during life, and the inspissation which he suspects as the morbid state proved to exist by chemical processes? Second, has the Doctor knowledge of any cases of a character similar to this which have been satisfactorily determined to have been attended by the blood-state to which he here makes reference? If he answers these two questions affirmatively, then I should be willing to give weight to his theory, or rather, I should be willing to consider it. If he cannot, I would offer the following explanation as covering all the phenomena which he has reported.

In the commencement a thrombosis occurred in the uterine and pelvic veins, which resulted in phlegmasia dolens and edema of the labia. Disintegration of the material constituting this thrombus resulted in septicemia and multiple emboli. One pellet of migrating matter plugged up a pulmonary capillary, and induced the pulmonic symptoms mentioned. Another, passing through the capillary network of the lung, as we know from the highest authority these little masses may do, produced cerebral embolism, with slowing of the pulse and fall of temperature. While others, passing into the capillaries supplying the superficial tissues of the extremities, produced those local sloughings which resembled, and indeed were points of localized gangrene.

Such cases as this are not very rare, as I have already stated, and I think that the explanation which I have given is that which is generally accepted by pathologists. The only premise which must be proved valid before the deduction becomes admissible is that of the possibility of the passage of an embolus or lymph-pellet through the capillary network of the lungs and back to the left heart. The fact of such a migratory course is maintained by Rindfleisch, O. Weber, and others who have carefully studied this subject. An embolus may be no larger than a blood-disc, and as the latter pass through the pulmonary capillaries as solid bodies, so may the former. It is only those plugs which are too large to do this which are arrested and create embolic pneumonias, the so-called metastatic abscesses of the lungs. Having passed through the pulmonary capillary network unarrested, these minute bodies grow by accretion of lymph, as a rolling snowball does by adhering snow, and, subsequently driven by the left heart into other organs, are too large to pass and act upon these vessels as this one did in the brain and in the vessels of the extremities."

The following

RESOLUTIONS ON THE DEATH OF PROF. CHARLES A. BUDD,

were unanimously adopted by the Society:

On the 17th of May our beloved and distinguished Fellow, Professor Charles A. Budd, M.D., in the ripeness of his honors, but young in years, passed away from among us. For many months he bore the burden of his sufferings with patience and courage, and when the end came, wrapped in the grandeur of his heroism, he welcomed the inevitable result as can only men with great souls like his.

In the demise of Professor Budd, the Fellows of the Obstetrical Society feel a personal grief far beyond their scientific associations, for they realize that a man and a brother, in the broadest acceptation of the terms, has been called from among them. His ripe experience, superb attainments, and genial bonhommie endeared alike physician and patient. No appeal to his charity was ever unheeded, and he never shrank from duty or responsibility.

As a leader in obstetrical science he ever realized his prominence, but, with a modesty as delicate as his genius was towering, he strove rather to coincide with than to impress his medical brethren.

His generosity and magnanimity knew no bounds, and his presence never failed to awaken admiration and gratitude. To the medical student he was magnetic, to the young physician sympathetic, and to his maturer companions courteous and affable. The Obstetrical Society will recollect him with pride and affection, and will cherish his membership as a priceless heritage his brilliant career bestowed upon it.

Therefore, be it *Resolved*, That the Obstetrical Society mourns with his family in their great distress, and expresses its sincerest sympathy in their bereavement, and that it will attend the obsequies in its corporate capacity.

Furthermore, the Obstetrical Society will perpetuate the memory of Professor Budd as one of its oldest Fellows, as a physician of great eminence, and as a man of the noblest impulses and grandest qualities.

Fordyce Barker, M.D., }
Montrose A. Pallen, M.D., } Committee.
Walter R. Gillette, M.D., }

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Reported by W. H. H. GITHENS, M.D., Secretary.

Stated Meeting, June 7, 1877.

DR. JOHN H. PACKARD, *President, in the Chair.*

DR. WM. GOODELL read the following history of a

CASE OF OVARIOTOMY WITH FIBROID TUMOR OF THE OVARY.

"Mrs. M. A. B., of Camden, aged about forty-five, and the mother of several children, had for many years a hard and slowly growing abdominal tumor. This was examined at different times by a number of physicians, who united in the opinion that it was a uterine fibroid. She saw her catamenia regularly, and experienced no trouble whatever from this tumor, until two years ago, when water began to collect in the cavity of the abdomen. For this she visited some German Spa, and returned home much relieved. The improvement was, however, only temporary, and on January 27, 1876, I was called in by Dr. J. M. Ridge to tap her. Nearly two pailfuls of fluid were removed. The tumor seemed to be as large as the adult head, and, after a very careful examination on my part, was pronounced to be a subperitoneal uterine fibroid. She took no ether on this occasion.

The fluid now rapidly reaccumulated, and in about a month had to be removed. This was done by Dr. Ridge, who, thereafter, was compelled to tap her every two or three weeks. Worn out by mental and physical suffering, she became a monomaniac on the subject of her tumor, and could think and talk of nothing else. Having at last made up her mind to have it removed, she took a private room in the Hospital of the University, and on December 12, 1876, was most carefully examined, under ether, by Drs. Agnew and Ridge and by myself.

The womb measured a trifle over 2.5 inches, and was anteflexed. The tumor was movable to a limited degree, and conveyed motion to the womb and sound, but not to the extent of its own displacement. Upon palpation, loud friction sounds were heard by every one who stood near. We all diagnosticated a fibroid outgrowth of the womb, with a short but broad pedicle, and with close adhesions to the abdominal wall. In view of this diagnosis, and of her urgent wishes, it was decided that an operation for the removal of this tumor was feasible, and should be performed whenever she was ready. Accordingly on March 22d, aided by Drs. Agnew, J. M. Ridge, C. T. Hunter, and Dowling Benjamin, I proceeded to remove this supposed uterine fibroid.

An exploring incision was first made. When the peritoneum was reached, it was so thickened and hardened by repeated tappings, that it was at first mistaken for the tumor. It was, indeed, converted into a hard and brittle plate. On cutting through it a large amount of fluid gushed out, and the tumor was now found to be a fibroma of the left ovary. Some omental and parietal adhesions yielded to the finger. The pedicle consisted of the slender Fallopian tube and ovarian ligament, scarcely thicker than the natural size, but about four inches long. The tumor, however, received its chief nourishment from a short and thick band, which moored it to the pelvic peritoneum. This was transfixed by a double ligature and tied on either side. But to do this it was needful to prolong the incision to a point about three inches above the navel, and to another not an inch from the symphysis pubis. The pedicle was next tied, and it, together with the band, was sundered, and the tumor was removed. It weighed four pounds and four ounces, and, as you see, is nacreous in color, and very firm in texture. A microscopic examination, made by Prof. James Tyson, has confirmed its fibroid character. A small secondary cyst appears at one end, but there are none in its substance. The pedicle was clamped, and all the ends of the ligatures brought out of the wound, which was finally closed by ten interrupted metallic sutures.

On the eighth day these were removed, and for twelve days no patient could have done better after such an operation. She suffered only from nausea, which yielded to appropriate treatment. Her appetite was fairly good, her spirits were so high that they needed repression, and everything betokened a speedy recovery. But, unfortunately, the woman was very restless and unreasonable. She would talk incessantly, and suddenly sit up in bed although urged and ordered to keep quiet. On Tuesday morning at nine o'clock (April 3d) the clamp being held by a shred was snipped off by Dr. Ridge. That day she seemed extremely well and was in unusually good spirits. But at 11 o'clock P.M., while her nurse was asleep in another room, our headstrong patient slipped out of bed. She could not get back with only her daughter's help, so the cook was called up to their assistance. The nurse was not awakened, because both mother and daughter wished to keep this act of imprudence a secret, but later all was discovered. At 1 A.M. of April 4th the nurse was aroused, to find Mrs. B. pale, and suffering from severe abdominal pain. This grew so bad that Dr. Ridge was sent for. Opiates and stimulants were given without stint, but she became weaker and weaker. At daybreak I was summoned by telegram, and reached her bedside by 7.30 A.M. Her pulse was over 160, and at the wrist felt as if a string of bubbles was passing along. Her abdomen was greatly distended; her eyes glassy, the wound purple, and the veins on the back of her hands almost empty. She was plainly in a state of collapse; nothing availed, and she died at 1 A.M., on April 5th.

No autopsy was permitted, but it is my opinion that she died from the shock given to the peritoneum from some sudden effusion of blood or of pus. Perhaps, by this very unfortunate movement out of bed, some freshly united surfaces were torn apart, or a small abscess opened. At any rate, her imprudence was the cause of her death. Dr. Thomas reports a somewhat analogous case,[1] in which after ovariotomy rapid and fatal collapse took place "apparently consequent on the sudden escape of a small amount of blood (one teaspoonful and a half) into the peritoneal cavity." His patient before this had been doing extremely well for several days, and gave every promise of recovery.

I have reported this case, not so much as an addition to the statistics of ovariotomy, as one showing peculiar difficulties of diagnosis, and a very unusual form of ovarian tumor. So rare is it that ovariotomists seldom meet with more than one such case in a life-time. With our present light, I do not see how it was possible for us to avoid our error of diagnosis. But the only harm that could possibly accrue from such an error would perhaps be a decision adverse to an operation."

DR. JAMES B. WALKER exhibited specimens from a

CASE OF DOUBLE OVARIOTOMY—DEATH FROM PERITONITIS THIRTY-SEVEN AND ONE-HALF HOURS AFTERWARD.

"Mary Connolly, æt. 45; married. Menstruated at sixteen years. The menstrual periods have always been regular. She has had seven children; the youngest is now twelve years of age. She had one miscarriage at the third month of gestation, the product of her first conception.

She was admitted to the ward for Diseases of Women in the Philadelphia Hospital, February 23, 1877. Being attacked with facial erysipelas shortly afterward, she was sent to another ward for treatment, but returned to the ward for diseases of women after the relief of the erysipelas, March 21, 1877.

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[1] American Journal of Obstetrics, April, 1877, p. 260.

March 23d.—The patient says she first noticed a tumor in the left inguinal region about the middle of November, 1876. It was about the size of her fist. Since then it has rapidly increased in size. There has been soreness in this region ever since her attention was first called to the tumor. She has had no attacks of severe pain, nor been confined to her bed. She had no menorrhagia nor metrorrhagia, but has continued regular till the present time.

Her abdomen is symmetrically enlarged, presenting the appearance as if at full term of pregnancy. The umbilicus is pouting; fluctuation is very perceptible. There is no apparent unevenness on palpation. Measurement gives thirty-nine inches just above umbilicus, thirty-five inches at ensiform cartilage, thirty-seven inches above the pubes.

Vagina relaxed. There are fibrous bands at the upper part. The os uteri is patulous and is high up.

Examination through the speculum showed the cervix to be hypertrophied, and the os patulous, with blood issuing therefrom. The sound passed two and one-half inches. The fundus was deflected a little to the left.

March 28th.—Dr. Linn tapped and drew off eighty-eight ounces of a reddish-brown liquid, almost transparent. He did not draw off all that had accumulated.

April 28th.—The abdomen has again become very prominent, interfering with respiration and causing some uneasiness about the heart.

A vaginal examination revealed the conditions above noted, with the addition of a marked fulness of Douglas's pouch, to which, however, no impulse was transmitted by abdominal percussion.

Desiring a satisfactory examination of the fluid, and also to relieve the woman from oppression, in the presence of my colleagues Drs. Duer and Parish, I tapped her in the median line about three inches above the symphysis pubis, and drew off seventy fluid ounces of a clear amber-colored fluid. This emptied only a portion of the tumor, leaving a marked sulcus at its upper part. Against this lower portion the canula was pushed, and the trocar passed into it. Its removal was followed by the escape of a reddish-brown, non-transparent fluid, amounting to 110 fluid ounces. This seemed entirely to empty the sacs, leaving a non-fluctuating mass in the left inguinal region, which was diagnosed to be the wall of a left multilocular ovarian cyst.

Both fluids became nearly solid on the application of heat; specimens were sent to Dr. Tyson for microscopic examination. He reported an abundance of red blood-corpuscles in the brown fluid, some epithelial cells in both, but no ovarian corpuscles in either.

The urine of the patient yielded no albumen to repeated examination.

Her temperature, taken thrice daily, never exceeded $99\frac{3}{5}$° F.

The patient was put upon supporting treatment. Having no prospect but that of being a hopeless, bed-ridden invalid for the few remaining weeks of her life, she resolved to undergo an operation, the dangers and exceedingly slender chances of which were plainly laid before her.

Accordingly at 12 M. of May 7th, in the presence of several members of the profession, including all of my colleagues of the obstetrical staff except Dr. Parish, who was unavoidably absent, and with the immediate assistance of Drs. Duer and White, and the corps of resident physicians, the operation was performed.

Operation.—The patient was placed on her back on a table, her feet supported on two chairs. An exploratory incision about three inches in length was made in the linea alba, the centre of the incision being about midway between the umbilicus and pubes.

The tumor was found to have quite firm adhesions with the anterior and lateral abdominal parietes; these being separated, visceral attachments were found to exist. The tumor was punctured by means of Atlee's trocar, but only a small amount of fluid escaped, the punctured cyst being a small loculament of the tumor. Deeper cysts were punctured. Owing to the fragility of the walls of these cysts, which prevented the proper retention of them outside the abdominal incision, and also on account of the visceral attachments, the incision was lengthened upwards about three inches. The puncturing of the cysts reduced the size of the tumor so that it could be removed through the incision. The remaining attachments were carefully torn, except in the case of an omental one, which, being quite firm, was first ligated with catgut and then cut. The tumor was removed from the cavity preserving its pedicular attachment.

Prior to the removal of this tumor, a second one was discovered which was now exposed. It occupied the left side of the pelvic cavity to its floor, and extended upwards to the left of the spinal column about four inches above the sacral promontory. It was considerably smaller than the first, but like it was multilocular. It had but two attachments, one peduncular with the right horn of the uterus, the other to the left floor of Douglas's cul-de-sac. This latter being old and very firm, a catgut ligature was applied to it, and the tumor removed.

Both pedicles being too short for the clamp, it was decided to ligate them and return them to the abdominal cavity.

Upon one a catgut ligature was applied and cut off short. Not having enough catgut for the other, a stout whip-cord was applied to it, one end of which was cut short, and the other brought out at the lower angle of the abdominal incision.

The bleeding points, of which there were several, were now closed with Pancoast's styptic, and Monsel's solution, and a few carbolized catgut ligatures were applied to points resisting the solution.

The viscera were cleansed, and all liquid removed from the abdominal cavity with sponges. One end of a cloth tent for drainage was passed to the floor of Douglas's pouch, the other end brought out at the lower angle of the wound.

The incision was closed chiefly with long silver wire sutures, passed by means of Atlee's needle. Two superficial silk sutures were also used.

A narrow strip of muslin, saturated with a carbolic acid lotion, was applied to the wound, a layer of cotton outside this, and a flannel binder applied and drawn with moderate firmness.

The patient was transferred to her bed, hot applications were made to the surface, and she was enveloped in blankets.

She was exceedingly feeble, and we very much feared she would not survive the shock of the operation, but under the internal and external use of whiskey, together with mustard draughts and vessels of hot water, she rallied, and two hours after the operation had a temperature of 100° F.

Her treatment consisted in the administration of beef-tea, whiskey and milk, morphia enough to keep pain in abeyance, with occasional doses of tincture of digitalis as a heart stimulant.

Evidences of peritonitis developed, and death supervened thirty-seven and one-half hours from the time of the operation.

The autopsy showed extensive peritonitis. There had been no hemorrhage.

There was hypostatic congestion of the lungs.

The heart walls were thin and pale.

The liver was very fatty, with a hard tumor in the region of the gall-bladder. The colon was attached to the surface of this tumor, and in its neighborhood were a few enlarged lymphatic glands of the meso-colon.

Section of this tumor revealed in its central portion some encysted gall-stones, showing it to be a firm fibrous encapsulation of the gall-bladder about two and one-half or three inches in diameter.

The kidneys were somewhat congested, but otherwise normal."

Dr. Wm. Goodell suggested that the disease in this case was a spindle- or round-cell sarcoma, and not a simple cystic degeneration. He was led to this conclusion by the failure of Dr. Tyson to find the ovarian cell, and by the fact that both ovaries were affected. He moved that the specimens be referred to a committee for further investigation.

The President appointed Drs. Walker, Parish, and Tyson.

REPORT OF THE COMMITTEE ON DR. JAMES B. WALKER'S SPECIMENS FROM A CASE OF DOUBLE OVARIOTOMY.

"We have examined the portions of morbid growth referred to me by the Obstetrical Society, and find them not of a malignant character. The portion marked from the small cyst proved to be a segment of small intestine with thickened peritoneal coat. Other portions presented the usual characters of the walls of thin-walled cysts.

The part marked from the liver presented a fibrillated structure infiltrated with small cells, and resembled tissue thickened by inflammatory infiltrations."

Dr. James B. Walker exhibited specimens from a case of

GENERAL INFANTILE TUBERCULOSIS INVOLVING THE BRAIN, LUNG TISSUE, AND THE MESENTERIC AND BRONCHIAL GLANDS.

Baby K——, age ten months. The medical history of the father's ancestry is good. The mother's father died of phthisis. The mother is one of eight children, the youngest being twelve years old, none of whom have given evidence of any inherited diathesis. The mother contracted syphilis and had secondary manifestations prior to the conception of this infant.

The child has been sickly since its birth. It has had persistent "snuffles;" followed by aphthae. Diarrhea has been almost constant, unless when digestion was aided by the administration of pepsin. It had purpura simplex four weeks before its death, on the extremities, with a few scattered spots on the trunk; this eruption disappeared during the administration of quinia and aromatic sulphuric acid. Three weeks before the death of the child, the irritabitity of the alimentary canal, which had been constantly present, increased. The temperature became higher. Diarrhea was less easily controlled, and the child was evidently dying of malnutrition. A cough, which had been present at intervals since the child's birth, became worse, and the abdomen more prominent and marked with enlarged veins. Deep palpation over the abdomen revealed small tumors, which were diagnosed to be enlarged mesenteric glands. Palpation over occiput revealed a "soft spot" of cranio-tabes. This was verified at the post-mortem. No cerebral symptoms whatever manifested themselves. The autopsy revealed the following lesions:

The *brain* was somewhat congested. A few disseminated tubercles on the vessels of the meninges in the fissure of Sylvius of left side. Three tumors were present: one on the convexity of the left cerebrum close to the longitudinal fissure; one under the anterior lobe of the same hemisphere; and one in the right corpus striatum. They were each about the size of a large chestnut.

Lungs.—Two bronchial glands in the right posterior mediastinum were each enlarged to the size of a walnut; the apex of the right lung was consolidated. A section exposed a caseous mass, which was purulent at its core, and tubercular at the circumference. There were disseminated tubercles in the surrounding lung tissue. The left lung was healthy.

The *heart* and membranes were healthy.

The *liver* was fatty.

Intestines.—Peyer's patches and the solitary glands were prominent and enlarged, but there were no ulcerations of either. The mesenteric glands were enlarged; a section of some of the largest presented a caseous degeneration of the contents.

Portions of the body not mentioned were normal, with the exception of a general anemic appearance consequent upon the prolonged illness.

Dr. Wm. H. Parish suggested that the masses found on the meninges of the brain were gummatous tumors.

Dr. Wm. H. Parish related his experience in a case of

PROLAPSE OF THE FUNIS,

and his failure to replace it by the knee-chest posture and the use of a flexible catheter and tape-loop. He wished to know if there were any better methods than the one he had tried.

Drs. J. L. Ludlow and J. H. Packard explained the method taught by the late Professor Hodge. He took a strip of muslin, and, turning one end up, sewed it so as to form a pouch or bag large enough to hold the prolapsed portion of the cord; a narrow pocket was sewed into the other end, and into this a stiff whalebone was inserted. The loop of the cord was then caught in the large pouch, the whole apparatus passed up into the uterus and the whalebone withdrawn, the bag being allowed to remain.

Stated Meeting, August 2, 1877.

The President, Dr. J. H. Packard, *in the Chair.*

TUMOR OF THE CLITORIS.

Dr. Albert H. Smith showed a specimen of tumor removed by Paquelin's thermo-cautère. The tumor, which was about the size of a large walnut, was a vegetative excrescence, the pedicle of which involved the tissues surrounding the base of the clitoris. The patient, who was admitted to the Women's Hospital for operation, was married, forty years of age, and three months pregnant. She made application for treatment on account of the constant recurrence of violent paroxysms of pain in the base of the tumor, which prevented her sleeping, and, resisting the impression of anodynes, were steadily exhausting her. Her pregnancy being no contraindication, but rather an additional urgency to its removal, from the danger of the continued pain setting up an abortive effort in the uterus, it was decided to remove it at once, which Dr. Smith did with the platinum knife of Paquelin's apparatus. The removal was accomplished with great rapidity, the tumor being drawn forward forcibly by a volsellum, which included in its grasp the considerably enlarged clitoris, making very tense the pedicle of skin and connective tissue, through which the knife speedily cut its way, being carried deeply enough to remove every portion of indurated tissue involved in the morbid growth, extending very closely upon the urethral meatus. At one stage of the process, the knife being raised nearly to a white heat, cut too rapidly, and a profuse hemorrhage burst forth from the very vascular tissues around the clitoris, and the dorsal artery, of unusual size, spurted out as large as a small bird's quill. The knife was immediately cooled down below a red heat, and pressed upon the bleeding vessels, when the hemorrhage instantly stopped. The slough from the burned surface completely separated in about ten days, leaving a healthy granulating surface, from which there was at no time any hemorrhage. The ulceration healed promptly, complicated by a slight irritability of the urethra, which soon disappeared. Four weeks after the operation there had been no return of the pain which had been so violent in the seat of the tumor, and the patient was perfectly comfortable, her pregnancy advancing undisturbed.

Dr. Smith exhibited the knife to the Society, showing its admirable facility of management, and its applicability to most cutting operations when hemorrhage is feared, and where union of the cut surfaces by adhesion is not required. He had used it with great satisfaction for the removal of superficial growths, especially epithelial cancers. The simplicity of the instrument, and the readiness with which the degree of temperature can be controlled, and especially the persistence of its action, give it great advantages over the galvano-cautery wherever the form of the knife makes it practicable. So far, only a short straight knife has been adapted to its use, which necessitates its being held perpendicularly to the surface, into which the incision is to be made ; so that for such operations as the excision of the cervix uteri, where the mobility of the uterus is not sufficient to allow it to be drawn by volsella to the vulvar opening, it cannot take the place of the constricting wire of the galvano-cautery. No doubt some additional forms of the knife will be added as the demands for them increase.

Some precautions are necessary in the use of the instrument, as Dr. Smith has found from experience. The knife should be brought nearly to a red heat in the alcohol flame before projecting the vapor of benzoline into it from the bottle, otherwise the rapid evaporation will cool the knife so that the flame cannot raise its temperature to the point of igniting the vapor, and the operator is foiled in his attempt to get up a red heat. The bottle of benzoline (which by the way should be of the best possible quality) should not be filled more than half full. If the fluid reaches nearly to the end of the metallic tubes in the cork, it may be driven into the rubber tubing leading to the knife, and be forced out of the opening in the knife instead of the aerated vapor. If this should take place the excessively inflammable nature of the benzoline fluid would render probable a serious accident. In operating in the neighborhood of the face, under etherization, great care must be used not to bring the red-hot knife within range of the vapor of ether, as it will ignite it instantly and the whole mass of the ether applicator, whatever form it may have, as well as the hair of the patient saturated with ether, will be in a flame. Dr. Smith had this happen in one case in an operation for removal of an epithelioma from the cheek, and has seen it also occur in the hands of another physician when the operation was upon a fungoid growth of the breast, in which the knife was not within a foot of the paper cone enclosing the ether towel. Fortunately, in both these cases the fire was extinguished instantly, before any injury occurred.

In cutting with the knife the tissue should be kept tense upon either side of the line of incision, when the knife will make its way almost as rapidly as a bistoury. If it should be cutting too rapidly, and a hemorrhage should occur, a less rapid compression of the hand-ball which supplies the vapor will cool it down. When a large vessel is opened, or is known to pass through the line of incision, by pressing the knife, reduced to a *black* heat, firmly upon the cut surface, a deep scorching of the tissues is produced, which will control hemorrhage completely at the time and prevent its recurrence at the after-separation of the slough. The prospective range of usefulness of this knife in such operations as already mentioned, as well as in the opening of deep abscesses, the incision of carbuncles, and other similar purposes, seems to give it a very important position among the mechanical appliances of modern surgery.

ABSORBENT COTTON.

Dr. Albert H. Smith presented for inspection by the Society a specimen of absorbent cotton, prepared by Codman & Shurtleff, of Boston, which he had found of great value in gynecological practice, in drying surfaces for operation and application of medical substances. Dr. Smith stated that it was the most satisfactory application for absorbing and removing the cervical mucus that he had found. By a few repetitions of the introduction of small pledgets within the cervix the cavity can be thoroughly cleansed. As a protection to the vagina from overflow of irritant fluids injected into the cavity of the uterus, it can be made very available by surrounding the cervix within the speculum with a ring of the cotton ready to absorb any excess that may ooze from the os uteri after the withdrawal of the syringe. Its superiority over the Swiss and German cotton prepared for dental operators is very great, its absorption of water being much more rapid.

Stated Meeting, September 6, 1877.

Dr. J. L. Ludlow *in the Chair.*

SAFE MODE OF USING SPONGE-TENTS.

Dr. Reuel Stewart exhibited an instrument for the insertion and expansion of sponge-tents. It consists of a bent silver tube, at the larger end of which is attached an india-rubber ball; the sponge-tent is impaled upon the smaller end, and a piece of goldbeater's skin or sheet-rubber is placed neatly over it and tied around a shoulder on the tube. The ball is to be filled with carbolized water, which by pressure is forced through the tube into the tent, causing its expansion. The rubber cover of the tent prevents the uterine secretions from becoming entangled in the meshes of the sponge, and thus obviates one source of danger in the use of tents; it also prevents any injury to the mucous membrane of the cervix. The dilatation by means of this instrument is very rapid and is quite powerful, it having succeeded where the Molesworth dilator had failed.

A CASE OF FIBROID TUMORS OF THE UTERUS.

Dr. Wm. H. Parish related the following history:

"Phœbe Brown, a negress, æt. 39 years, a native of this country, was admitted to the Philadelphia Hospital, March 1, 1877.

From her we obtained the following history of herself: She has never been married, and has never been pregnant. At the age of fourteen years she first menstruated, and when this function was established the flow was moderate in amount, and lasted four days—four days seeming to be with her the normal duration of the menstrual period. Pain was always present at such times. At the age of twenty-three the periods began to increase in duration, with an increase in the amount of flow and in the severity of pain. For several years subsequently they lasted from six to eight or ten days. When about thirty years of age she noticed in the left iliac region a tumor about the size of a walnut, and supposed by a physician who saw her at that time to be an abscess. The tumor increased in size, but, however, very slowly. Eventually the recurring menorrhagia began to affect seriously the general health and strength, and about three years ago she was admitted to the Episcopal Hospital, where for several months she was treated by daily hypodermic injections of ergot. About one year ago she was for a time under the care of Dr. Goodell, in the University Hospital. There she was also placed under the use of ergot, and in addition, as I have since learned from Dr. Goodell, the capsule of a submucous fibroid was incised. The patient states that after this incision there was for several months a diminution in the amount of blood lost, but a constant increase in the amount of pain, this being especially severe about the menstrual nisus. She also began to pass at intervals small, rough, irregular, bone-like masses.

The following notes were taken on June 6, 1877:

Since admission to the Philadelphia Hospital there has been an almost incessant escape *per vaginam* of blood, or of a fluid of a bloody watery character. At what seemed her menstrual periods the flow of blood has been excessive, attended with pain more or less severe, and at times expulsive in character. On different occasions she has passed small substances of a bony character. The woman has become very anemic and greatly exhausted, so much so, that she has to spend most of the time in bed.

There has never been material disturbance of either urination or defecation.

As the woman lies on her back with the limbs extended, a mass can be seen in the left iliac region, raising the thinned abdominal wall. This mass, on palpation, is found to be about as large as the two fists, globular in shape, uniformly dense and unyielding, and with but slight tenderness. The upper border of the tumor is about one inch below the level of the umbilicus, and its inner border does not reach the median line. Just above the pubis the enlarged fundus of the uterus can be felt distinctly. The tumor can be moved without imparting motion to the uterus, unless the former is carried beyond a certain point, when, it having reached apparently the end of its tether, the uterus is carried in that direction. This tumor can have no close connection with the uterus, yet must be moored to it either by a pedicle of its own, or by one of the left uterine ligaments. It is this tumor that was first noticed by the patient some ten years ago.

To the right of the median line, on deep palpation, can be distinguished another mass with similar characteristics, but it is not larger than a walnut, and evidently closely connected with the right of the uterine fundus by a broad attachment. Both these tumors are undoubtedly fibroid in character; the latter certainly springing from the peritoneal surface of the uterus. The other may possibly be ovarian in origin, and especially is this view favored by it having been first observed in the region of the ovary. But we all know the inaccuracy of the observations of patients themselves, and, besides, pedunculated subperitoneal fibroid growths are much more frequent than uniformly solid ovarian fibroids. By the introduction of the hand into the rectum the differential diagnosis between a uterine or an ovarian fibroid could probably be established; but as the question of removal of this tumor has not presented itself, this mode of examination has not been resorted to. A digital examination, *per vaginam*, shows the external os to be patulous, admitting the tip of the finger. The cervix is evidently shorter than normal, its upper portion being taken up by the body, which by the combined manipulation is distinctly ascertained to be enlarged, globular in form, and the fundus above the pubis. The uterus is somewhat elevated, but it is not fixed, and there is no enlargement of the vaginal portion of the cervix. The sound passes 2½ inches, but is deflected forward as in anteflexion. Grating against bony or calcareous substances is readily perceived, but no intra-uterine tumor can be outlined by the sound.

We, however, diagnose the very probable existence of an intra-uterine tumor, basing the diagnosis upon the globular form of the uterine enlargement, upon the shortening from above of the cervix, upon the detection of concretions, and upon the metrorrhagia.

On June 6th two sponge-tents of the shape of the sound as it passed into the uterus were introduced.

On June 7th these were removed and five others were inserted.

June 8th.—After removal of the tents, the patient being etherized, the cervix was found sufficiently dilated to admit easily the finger. We found an ovoid tumor about the size of a hen's egg, with a constricted attachment to the *fundus uteri.* About this attachment were several rough, bony masses, seemingly loose and easily moved about. Some of these were then removed, others were not removed until after the extraction of the tumor. With the assistance of my colleague, Dr. Walker, and of Drs. Holland and Kerr, internes, I further dilated the cervix with a Barnes's dilator, and proceeded to adjust a wire about the pedicle.

This was not easily accomplished. Under manipulation, the cervix did not remain sufficiently relaxed and dilated. The vulvar orifice and the pelvic outlet were so small that the hand could not be introduced into the vagina, so that only with firm pressure with the hand against the perineum could one finger be carried to the fundus, although Dr. Walker, by supra-pubic pressure, forced downward the uterus to as great an extent as seemed safe, considering the existence of large subperitoneal growths. After patient effort, however, the wire was placed about the tumor, and with an écraseur the pedicle was severed. Now, however, the tumor, though movable within the uterine cavity, was larger than the canal of the no longer sufficiently dilated cervix. Hence the extraction, in the absence of the proper forceps, was not easily effected. However, with the fenestrated blade of a Simpson's cranioclast acting as a scoop, the tumor was removed without resorting to incision of the cervix and without laceration of the cervical tissues. The hemorrhage was not sufficient to require the use of stypties.

The tumor, after removal, was white and glistening and very dense. Its surface presented no bony nor calcareous particles, and at no portion of its surface were there evidences of concretions having been detached.

The appearance of the tumor has left me at a loss to determine the exact origin of the roughened, jagged, bonelike masses which had been repeatedly passed *per vaginam*, and some of which we found detached *in utero*. It seems to me not improbable that they were the representatives of a calcareous or osseous metamorphosis, through which another and a distinct fibroid had passed, and had so disappeared that its existence could be no longer ascertained save in its débris.

The patient did well until the fourth day, when the temperature ran up to 104° F., the pulse to 116, with cessation of all discharge from the genitals, and with great pelvic tenderness, especially in the uterus and in the tumor of the left iliac region. There was evidently metritis and probably some pelvic peritonitis. Moreover, the tenderness, on palpation of the tumor, was so decided that either the pelvic peritonitis must have been most severe over the surface of the tumor, or there must have been an inflammation of the tumor itself similar to that of the uterus.

Under appropriate treatment the temperature on the next day was reduced to 99° F. and the pulse to 96, with a diminution of the local tenderness, and a return of the vaginal discharge of a muco-purulent character. There was no recurrence of the unfavorable symptoms.

June 30th.—The woman has been confined strictly to the recumbent position, but is to-day permitted to sit up. There has been no escape of blood from the genitals. The uterus is no longer tender, and is decidedly smaller. The tumor of the left iliac region has fallen lower in the pelvis, and is undoubtedly smaller than it was previous to the operation. The anemia is disappearing, and the patient has gained in flesh and in strength.

I have ventured to cheer the patient with an opinion that her troubles are probably over. I have felt warranted in giving this opinion from the following considerations:

Almost her only serious symptom was the metrorrhagia; this was probably occasioned by the tumor which we removed; the existence of subperitoneal growths frequently occasions no menorrhagia; the climacteric period is with her approaching, she being nearly forty years of age, and having been always single; the consequent improbability of the further growth of any small interstitial fibroids that may possibly now exist; and the certain non-development of new fibroids after the climacteric."

Dr. William Goodell said that as a needful supplement to the very instructive paper just read, he would give the history of this woman before she fell into Dr. Parish's hands. She was admitted April 12, 1876, into the Hospital of the University of Pennsylvania, on account of a uterine fibroid which had greatly reduced her by constant pain, by frequent losses of blood, and by continuous serous discharges. She had been treated at the Episcopal Hospital by hypodermic injections of ergot, but with temporary benefit only. The cervix and os uteri were those of a virgin, and the former stood out from the convex surface of the tumor, which blocked up the upper portion of the vagina, like the nipple of a turgid breast. The sound gave a length of four inches, and the uterine body reached up to the navel, being fully as large as the fetal head. After a preliminary treatment by tonics and by hypodermic injections of ergotine, I dilated the os by two instalments of tents, and brought her before the medical class of the spring session. On removing the last batch of tents, I found the fundus occupied by a large mural tumor, which bulged but slightly into the uterine cavity, and far more into the abdominal cavity. On one side of it were two small and rough sessile tumors, apparently outgrowths from the larger one. These, with a pair of scissors, I split down flush with the floor of the womb. I then incised the capsule of the supposed parent growth to the extent of about two inches. This was done by repeated clips with the points of a long-handled pair of scissors, but with much difficulty, for the os uteri was not dilated enough, and the fundus lay too high up.

Not a bad symptom followed the operation, and in a few days the treatment by hypodermic injections of ergotine was resumed. A purulent and shreddy discharge now ensued, and, a few days later, she passed a solid fragment. It was unfortunately thrown away before I could get the chance of seeing it, but she and the nurse both averred that it was as large as a walnut. After this the os closed up, and under tonics she mended greatly in flesh and strength. The uterine tumor lessened very nearly one-half in size. Her next monthly flux was less painful and less abundant than she had known it for years.

At this time, the managers, from a lack of funds, reduced the number of free beds in the hospital, and, much to my regret, I was obliged to discharge her on June 17th. Shortly afterwards she began to pass calcareous fragments per vaginam. These she collected and brought to me during the following winter; and I now submit them to the inspection of the fellows. You will see that they look like fragments of branch coral. At this visit I examined her, and found the os uteri and cervix as virginal as before, and the tumor still more diminished in size.

I now lost sight of her for several months, but early this spring she came to seek readmission to the hospital—more on account of pain than on account of hemorrhage. I found that very little change had taken place; the cervix was perhaps softer and shorter, but the os kept still unopen. As all the free beds at my disposal were then occupied, I could not admit her. She thereupon went to the Philadelphia Hospital, and very fortunately fell into the skilled hands of my friend Dr. Parish, who has just completed her history.

With regard to the adjustment of the wire around the pedicle of an intra-uterine growth, I have had as much difficulty as Dr. Parish experienced in his case. But not since adopting the following plan, somewhat modified from that of Dr. Kidd, of Dublin:

The woman is first etherized, and brought to the edge of the bed, where each leg is supported by an assistant. The operator now seizes the anterior lip of the os with a volsella, drags the womb down as low as possible, and then entrusts the handles to one assistant, who steadily keeps up the traction. Meanwhile the other assistant keeps up a firm suprapubic pressure upon the fundus uteri. The operator next introduces the index-finger of his left hand into the uterine cavity, and by it as a guide, seizes hold of the polypus or the growth with a second volsella, the blades of which are united by the French lock, so that they can, if needful, be applied separately. Failing to twist off the tumor, and wishing now to gain more room in the vagina, he removes the first volsella, and then slips the wire-loop of an écraseur over the handles of the second. When the loop has passed the equator of the tumor, the operator hands the volsella to an assistant and draws in the slack of the wire; but, before tightening it, he causes the traction on the polypus to be relaxed, and then pushes up the fundus of the womb with the shaft of the écraseur. The object of this manœuvre is not only to restore the vault of the womb, if it has been cupped by the traction on the polypus, but also to get the wire close up to the root of the stalk. A few turns of the screw now cut off the polypus, which, being still held by the volsella, is finally extracted.

Since pursuing this plan, I have removed many intra-uterine growths, and have not been foiled in one of them, not even in cases wholly uterine, in which the *os uteri* had not been in the slightest degree expanded by the stalkless tumor, and had to be dilated *ab initio* by tents. In my last three cases—all of them sessile fibroid tumors in the process of self-enucleation—

I experienced, in fact, less difficulty in detaching the growths from the uterine wall than in subsequently removing them from the uterine cavity.

A CASE OF TWINS.

Dr. Wm. T. Taylor related the following history: "In July last I was called to attend Mrs. S., a primipara, who was in the first stage of labor at 11 A.M., and whilst making an examination the membranes broke. I found the vertex presenting, which being in the fifth (left occipito-posterior) position of Baudelocque, I changed to the first (left occipito-anterior). The labor progressed slowly, and a child was born at 2 P.M. After tying the umbilical cord, I noticed that the uterine tumor had but slightly diminished, and as the pains were still quite active, another head soon presented itself, followed by the body of a dead babe, whose skin was peeling off. It was quite offensive. There was but one placenta, to which both cords were attached, and the line of demarcation on it, between the living and the dead portion, was very apparent.

The children were females, and the living one was very weak and pallid, so that I feared it would not survive.

I was surprised at these births, but on questioning the mother, I learned that about ten days previously she had arisen from bed in her sleep at night, and had fallen against a trunk, striking her abdomen violently; this awakened her, and the pain made her quite sick for two or three days, but as she afterwards felt the child move she was not aware of any injury being done. The blow had certainly killed one of the children, and the other became weak and pale from its vascular connection with its dead sister.

A few days, however, of extra-uterine life, and the breathing of pure air, brought color to its face, and strength to its body, so that now it is quite strong and well."

REPORT ON DR. WILLIAM H. PARISH'S SPECIMEN OF THE CYST OF THE OVARY AND BROAD LIGAMENT WITH PROCIDENTIA.

The committee appointed to examine the specimen consisting of a large cyst, complicated with procidentia, presented by Dr. Parish at the last meeting of the Society, would respectfully submit that, after a careful examination, they are of opinion that the cyst, in its earlier stages, when not so nearly filling the abdominal cavity, probably produced upon the uterus the effect of dragging it upwards and of thus lengthening the uterine ligaments; but that later, when the cyst had become so large that its further growth met with resistance from the abdominal walls and the abdominal viscera, its increased bulk must have pressed down into the pelvic cavity, and thus have at least aided in the production of the procidentia.

In the absence of all *ante-mortem* history, especially as to the relative duration of the cyst and of the procidentia, the opinion that the cyst in its earlier stages probably dragged upward the uterus, has been based upon the familiar fact that tumors of the uterine appendages, when large enough to rest upon the pelvic brim, do thus carry the uterus upward.

The further opinion that later the uterus was pressed downward by the cystic tumor, is based upon the extreme degree of the procidentia, upon the very large size of the cyst, upon its unilocular character, the fluidity of its contents, and also upon the existence of a localized dilatation of the cyst, so situated as before the rupture to have most probably protruded downward into the pelvic cavity.

Edward L. Duer,
H. Lenox Hodge,
W. H. Parish,
Committee.

ANTE-PARTUM HEMORRHAGE.

Dr. J. L. Ludlow related the following history of a case of hemorrhage before labor, and asked if any of the members had had similar experience, and what, in their opinion, was the source of the bleeding?

The patient was a primipara, who had gone nearly to the end of the period of gestation without unusual symptoms. One day, while using the commode, she had a free hemorrhage from the vagina, accompanied by severe pain. The Doctor was sent for, and on his arrival found the os entirely closed; the hemorrhage had ceased, and the pulse was good. The pains had also subsided. Subsequently, labor came on and progressed naturally without any untoward incident. The placenta was not prævia.

Dr. Ludlow's own opinion was that the bleeding had been due to the rupture of varicose vessels of the os uteri.

ANENCEPHALIC FETUS.

Dr. Reuel Stewart related the experience of a friend in delivering a headless child. On his first examination he found what he supposed to be the hips of the fetus presenting. A second examination revealed a shoulder. A soft fluctuating mass was slowly forced down by the uterine contractions. It finally broke, and a gush of blood was the consequence. When the child was delivered, a collapsed bladder occupied the place where the head should have been.

MODIFIED PESSARY.

Dr. J. L. Ludlow exhibited his modified pessary, which now consists of a hard rubber horseshoe pessary, the arms of which are continued and united by an elastic combination of whalebone and pure rubber tubing.

Remarks on the history of the elastic pessary were made by Drs. Albert H. Smith and Reuel Stewart. It was first employed by Dr. Chas. Evans, of this city. The original material being whalebone, wrapped and coated with wax.

Stated Meeting, November 1, 1877.

The President, Dr. John H. Packard, *in the Chair.*

Dr. Wm. Goodell related the history of

A CASE OF COMPLETE LACERATION OF THE PERINEUM FROM AN UNUSUAL CAUSE.

"M. K., aged 25, fell into labor with her first child on April 6, 1876. Nothing unusual occurred until the head reached the perineum, when it was arrested. Hours passed away without any further advance, and on the following day the midwife in attendance, becoming frightened, sent for a very experienced and skillful accoucheur, to whom I am indebted for the very interesting details of this case. He found the head appearing at the vulva during every pain, and receding immediately after. Sending for his forceps, he with a good deal of difficulty succeeded in delivering the head, and without any injury to the perineum. But now the shoulders refused to follow, and the neck was so stretched, and the head so completely blocked up the vulva, that he could not reach the armpits. As the child was living, he made for some time as strong a traction as he dared on its head, but without effect. When it was dead, he put all his strength on the head, and finally brought the shoulders out. But now the body stuck fast, and no amount of traction could release it. After an hour of fruitless work, he, with great difficulty, passed up his hand and discovered, attached to the sacrum, what at first appeared to be a conjoined twin. A closer examination revealed a tumor of vast size, which filled up the abdomen like another child. Finding that it contained fluid, he opened his penknife and succeeded in carrying up the carefully guarded blade to the cyst, but not without cutting himself pretty severely. A prodigious quantity of serous fluid immediately gushed out, deluging the bed and floor, and the child was at once expelled. The cyst started from the lower extremity of the sacrum, carrying with it the anus, penis, and scrotum several inches below the natural site. It was more bulky than the whole body of the child, and in its collapsed state reached fully five inches below the heels. No section of the sac was permitted, and its character was therefore undetermined. My friend now found the perineum shockingly torn, and it is his impression that it was injured while he was carrying up his hand closed to guard the open penknife blade. He at once put in several sutures, but the perineum had lost its vitality from the severe and continuous pressure to which it had been subjected, and no union took place.

When she came to me to have the perineum restored, she was pregnant, the catamenia having ceased on June 23, 1877. Fearing that another labor would increase the rent, and besides that the encumbrance of a nursing child would postpone the operation for two years at least, I decided to yield to her importunate wishes. The rent was the worst that I ever saw. It extended up the bowel fully one inch and a half above the sphincter, and bad sloughing had taken place at the perineal gap. I brought her before the class of the University of Pennsylvania, and operated on October 3d, when she was over three months advanced in pregnancy. The operation lasted nearly two hours, being the longest time that I have ever been obliged to give to such a case. Four embedded sutures were needed to close the bowel gap, and four more to restore the perineum. On the 10th inst. I removed six sutures; on the 11th another, and on the following day the eighth suture, which I had overlooked, but which she discovered by anxious fingering. All these sutures were shotted; three, on which the strain was the greatest, with double shot. On the 13th inst., four ounces of sweet oil were thrown up into the bowel, and one ounce of castor oil was given by the mouth. Four hours later the bowels were moved, the action being aided by enemata. Perfect union had taken place. In spite of my strong remonstrances, she left the Hospital of the University two weeks after the operation. I opposed her departure on the ground that such early movements would be liable to overstretch the yet tender cicatricial tissue, and prevent the subsequent control over flatus; but she would not listen to my arguments. Apart from the very remarkable and unusual circumstances attending this woman's labor, this case is of interest as showing that the vulnerability of pregnant women has been overrated. This makes the second case of complete laceration of the perineum which I have restored during the existence of pregnancy, and in neither one was gestation interfered with. In my first case, pregnancy was unsuspected. I have also performed minor operations, such as the removal of urethral caruncles and the dilatation of the urethra, in pregnant women, without any but good results. The only objection to such operations is the liability to a greater amount of hemorrhage from valveless veins more or less varicosed by the pressure of the gravid womb."

PERINEAL SUTURES.

Dr. Wm. Savery asked for the opinion of the Society as to the best material for perineal sutures.

Dr. Wm. Goodell used a strong silver wire exclusively, because it was so pliable, and could be so readily removed, and without pain.

Dr. Wm. H. Parish considered the usual time, two weeks, as entirely too short a period for the patient to remain in bed after the operation for ruptured perineum complicated with procidentia. In a case which was under his care, the wound was entirely healed in eight days, but it required three weeks of rest to reduce the uterus from five and one-half inches down to three inches, inside measurement by means of the sound. He thought that a heavy prolapsed uterus continually pounding on the cicatricial union would cause its destruction and reproduce the deformity.

Dr. Goodell agreed with Dr. Parish on the ground that the tender cicatricial tissue would become overstretched and absorbed by too early movements, but he did not think the reduction in the size of the uterus would be permanent by rest alone. He had seen an instance in which the accident described by Dr. Parish had occurred. The uterus, which measured seven and a half inches by the sound, had perforated the new perineum, made by another physician. He cured the case by amputating the cervix and restoring the perineum. The only permanent cure in such cases is by amputation of the cervix, or by an operation which will restore the cervix, if lacerated, in conjunction with the restoration of the functionally weakened perineum.

Dr. Albert H. Smith narrated the history of a case of procidentia which had existed for twenty years. The uterus was very much enlarged. The sound entered to a depth of five and a half inches, and the lateral enlargement was so great as almost to fill the cavity of the pelvis. This patient was kept three weeks upon her back, at the end of which time the uterus was reduced to almost the normal size. A modified Hodge pessary was introduced to prevent prolapse, and the patient is now absolutely comfortable.

As regards the material for sutures, he had found that iron wire, when broken and left in the tissues, was entirely dissolved.

Dr. Lewis D. Harlow was called to the chair.

Dr. John H. Packard called the attention of the Society to two new forms of suture, described by Dr. H. L. Thomas, of Richmond, Va., in the *Am. Journal of the Med. Sciences* for October, 1877, which might be available in closing ruptures of the perineum.

He remarked that metallic sutures might be left a long time in the tissues without injury, and thought that they were oftener removed too soon than allowed to remain too long.

The best needle, in his opinion, was one with the eye near the point, like that of Mr. Baker Brown, which may be passed, the wire inserted in the eye, and the needle drawn back. A mere tip of the wire gives hold enough, and there is no trouble whatever from "kinking."

He also suggested that, in view of the fact that after these operations union is more apt to fail at the vaginal portion of the wound, it would be well in operating to dissect up the vaginal mucous membrane at the edges, and suture it separately, so as to raise it into a crest or ridge towards that canal.

Dr. Packard related a case of

SUDDEN DEATH FROM RUPTURE OF THE UMBILICAL VEIN.

An infant, one day old, was in the arms of a neighbor. She had been standing, and proceeded to sit down in a chair which she had noticed near her. The chair having been removed by some person, she fell heavily to the ground. The child became very fretful and pale, and died about twelve hours after the accident. The autopsy, made in haste, and under observation, showed the abdomen filled with blood. The source of hemorrhage was not made out, but was probably the umbilical vein.

A CASE OF LABOR WITH A SUCCESSION OF COMPLICATIONS.

Dr. Wm. T. Taylor related the following case:

"The complications which occurred in the following case of labor have induced me to present a report of it to the Obstetrical Society, hoping that it may be acceptable to the members.

At 11 o'clock P.M. of September 26, 1877, I was summoned to attend Mrs. Kelly, a strong and healthy Irishwoman, aged 23 years, who was in labor with her second child. The os was soft and dilating, the pelvis roomy, and the head presenting.

At midnight the os was well dilated, and, on examination, I found that a hand was coming down between the head and the side of the pelvis, which was easily pushed up. At the same time I discovered the occiput to be in the left posterior position (the fifth of Baudelocque). With my hand I turned it anteriorly to the first position, so that the labor might progress more rapidly. This is my invariable custom in all occipito-posterior positions of the vertex, knowing full well that much pain will be saved to the mother, and time gained by the obstetrician, if the head starts on its journey through the pelvic canal in the occipito-anterior position. Having made this change, I waited patiently for the head to advance, for the pains were strong and expulsive; but it did not descend, for it had turned back to its former position. To prevent this from occurring again, I introduced my hand well up into the uterus, and having taken hold of the right shoulder of the child, turned the body as well as the head completely around from the fifth to the first position, with the back of the babe towards the mother's abdomen, knowing that it could not then revert.

Whilst making this change of position, a fold of the cord slipped down alongside of my hand into the vagina, and as the safety of the child required prompt action, I had the mother turn from the left side, on which she had been lying, to the knee-and-breast position, and soon replaced the prolapsed funis, keeping her thus until I was satisfied that the child was moving, when I requested her to turn on her side again.

Very soon after, the expulsive pains began to abate, and were not so frequent.

At 2 A.M. she became weary, and as her efforts at delivery were ineffectual, I applied the forceps, and delivered her quite easily of an asphyxiated child, at a quarter past two. The cord was pulsating strongly, but the heart was still. By inflating the lungs with my own breath, in a few minutes the heart began to throb, and the child gave a feeble gasp. Dr. Marshall Hall's method was also tried, and the child was placed in a warm bath, and dashed with cold water. It was also rubbed with whiskey, and slapped. By the use of such means it gradually became resuscitated, and in about half an hour was breathing more freely, and soon began to cry. The cord was then tied, and the babe was removed from its mother. The placenta came away with very slight traction, and there was but little hemorrhage.

The mother was placed comfortably in bed, bandaged, and allowed to rest. The child was washed, and put alongside.

About daylight the nurse observed that the child was rolling its head with quick jerks from side to side; that its eyes were turned in towards its nose, and that it was tossing its arms about. There was also a twitching of the face.

At 10 A.M. I saw it, when the strabismus had disappeared; but the jerking of the hands, and rolling of the head still continued. It was put to the mother's breast, but could not suck; yet we succeeded in getting it to swallow a little water.

The case looked very discouraging, and I thought that all my efforts to resuscitate the child were for naught; but I determined to try the effect of bromide of potassium upon it, and gave one-half grain doses every hour, until it became quiet, or fell asleep. At 5 P.M. the convulsive movements began to abate, and the medicine was continued from time to time at longer intervals until morning, when they ceased. It had urinated, and had a free discharge of meconium during the night.

It is now perfectly well, but I am at a loss to know the cause of this condition, as there was no great pressure upon the head, which was delivered quite easily with the forceps applied to its sides; but the manipulation it underwent, both in and out of the womb, may have been the cause of this condition, or the slight turn of the head to change its position may have produced some temporary congestion of the spinal cord, and caused these convulsive movements by reflex action."

CONVULSIONS IN INFANCY.

DR. R. G. CURTIN stated that in cases of asphyxia, when the contractions of the heart were so feeble that no pulsation could be detected in the cord, the direct impulse of the apex of the heart may be felt by pressing the fingers up beneath the ribs.

He considered that the convulsions present in Dr. Taylor's case were probably a manifestation of trismus.

DR. TAYLOR said the force employed in turning the entire fetus from a posterior to an anterior position might have injured the nervous centres, and given rise to the convulsions.

DR. J. H. PACKARD considered the cerebral congestion consequent on the asphyxia to be quite sufficient to cause the convulsive symptoms.

DR. J. L. LUDLOW inquired as to the treatment of the cord immediately after birth, and recommended that in such cases it should be cut, and allowed to bleed, so as to relieve congestion of the lungs or brain.

Dr. Thos. J. Yarrow agreed with Dr. Ludlow as regards his plan of bleeding from the cord.

Dr. Horace Williams, in a similar case of convulsions, had used hydrate of chloral in half-grain doses every hour. They had ceased entirely in five or six hours. In another case which had been under his care recently, the probable cause of the convulsions in the infant was a fright experienced by the mother from burglars, a day or two before the labor, as the latter had been rapid and without complications. The convulsions in this case were obstinate. Potassium bromide and milk of assafetida failed to relieve, but chloral was successful.

Dr. Wm. Goodell, employed at the Preston Retreat, as a standard compound for infantile convulsions, and especially for colic:

℞. Chlorali,
Potassii bromidi,
Sodii bicarbonat.................āā gr. i.
Aquæ menth. virid.................. f. ℨ i.
M.

This mixture in the above dose was given in sweetened warm water to the youngest infant. In cases of colic a single dose was uniformly successful in giving relief. In convulsions it was repeated every hour or two, according to the severity of the attack and the urgency of the symptoms, until relief was obtained. He prescribed several quarts of this mixture every year.

Dr. J. L. Ludlow found that the colic of young infants was in many cases the result of exposure to unaccustomed cold. He recommended dry heat to the extremities, and warm wrappings.

Dr. Albert H. Smith had succeeded in relieving infantile convulsions by the use internally of potassium bromide dissolved in milk of assafetida. He also used alcoholic stimulants by the mouth, and turpentine applications over the spine.

Dr. Horace Williams found that children bore chloral in larger doses proportionately than adults did. He had been called recently to see a boy five years of age, who had swallowed a draught containing thirty grains of hydrate of chloral. The child slept for several hours, but could be roused at any time. The next day he was perfectly well again.

Dr. Thos. J. Yarrow narrated the history of an attack of convulsions in a weak young infant—one of twins. It had from forty to sixty seizures every twenty-four hours. Hydrate of chloral, gr. i., with potassium bromide, was given every second hour for a period of two weeks. The convulsions became slighter and less frequent, but did not cease entirely. The cause in this case seemed to lie in the food. The child was at first fed upon condensed milk. A wet-nurse was procured, and this change was coincident with the improvement in the character of the convulsions. The nurse was afterwards discharged, and, contrary to the advice of the doctor, cow's milk was tried. The case was now lost sight of in consequence of removal from the city.

TRANSACTIONS OF THE CINCINNATI OBSTETRICAL SOCIETY.

Reported by J. W. UNDERHILL, M.D., Secretary.

Stated Meeting, July 12, 1877.

Dr. J. J. QUINN, *President, in the Chair.*

DR. UNDERHILL read a paper entitled

OBSERVATIONS UPON PSEUDOCYESIS, AND UPON THE RELATION OF PREGNANCY TO CAPITAL PUNISHMENT.[1]

DR. REAMY, opening the discussion upon the paper, said: "There is one aspect of these cases to which I wish to refer. I notice that the essayist (whom I know to be a man not given to suspicion of his fellows) seriously considered in an examination of the third case named in his report, the question as to whether this woman, notwithstanding her age and high reputation, had not after all been indulging illicit intercourse—making therefore a guilty possibility the foundation of her fears of pregnancy.

In case of a woman, young or old, living out of wedlock, I do not think such a delusion should be accepted even as presumptive of irregularities. The delusion shows in most cases a diseased mind, and we shall generally go astray if we search in guilty practices for the origin of that disease.

It has fallen to my lot to see many of these cases. I will mention but a few bearing upon the above-named point. One ease, a beautiful and refined girl, twenty years of age, from an adjoining State, was placed under my charge. She imagined that on a certain night, specified and clearly designated circumstantially to her mother and a married sister, her room had been entered by two men, one of whom had chloroformed, and the other ruined her. She had read a few days before, a false and sensational newspaper article detailing the particulars of a similar atrocity. When I examined her four months after her supposed pregnancy had occurred, she was pale, anemic, nervous, amenorrheal. Her countenance was the picture of despair. At times the abdomen was large, then decidedly flat. Mammæ swollen and containing milk. She suffered from nausea every morning, and was conscious that for the past few days she had felt violent movements in the abdomen. The friends were constantly in dread that she might commit suicide. Ferruginous tonics with generous diet, bathing, air, exercise, etc., were tried without avail; general health did not improve, and no argument or assurance could convince her of her delusion. On every other subject she was perfectly rational. Finally, after five months from the date of her supposed pregnancy had elapsed, I took into her room a manikin, the articulated bony and ligamentous pelvis, with Schultz obstetrical plates. I by this means succeeded in demonstrating to her the impossibility of pregnancy at five months advancement without greater abdominal enlargement. I spent in this demonstration at least an hour, going over and over the ground. It was in the presence of her mother. Success rewarded me. She was convinced of her delusion. The fear never returned. She gained eighteen pounds in weight in three weeks. The menstrual function was at once re-established. This was four years ago. She is still unmarried, and has remained in perfect health. The higher nervous centres here were involved as the primary lesion. The anemia, amenorrhea, and other symptoms were secondary. The reflex here was from brain to sexual system, not from sexual system to brain. I have seen several other cases in comparatively young unmarried women, where, as in this case, there could be no suspicion of improprieties.

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[1] See Original Communications in this number.

Nine or ten years ago, I had in my charge a woman who was seventy-four years old—a widow. Her husband had been dead thirty years. She was a woman of rare culture and refinement, who had led a life of unquestioned purity. She imagined herself pregnant. She was pale and thin, and suffering an agony of shame. 'O Doctor,' she cried out, 'to think how careful I have been all my lifetime, how honorably I have raised all my children, and now that in my old age I must be disgraced!' She could not be convinced—she had of course had real experiences in earlier life, and could not be deceived as to fetal movements, which were violent, as she said, abdominal enlargement, which she had to some degree, nausea, etc. She could not account for the accident, but had a vague notion that her sleeping apartments had been entered by a man. She supposed herself eight months gone when I was called. On several occasions she held me by her bedside an hour at a time, sobbing and pouring out the anguish of her soul in bitterness of remorse at her misfortune and disgrace. The most rigid examination showed no sexual or pelvic disease. It was temporary and partial insanity. She fully and speedily recovered after the eleventh month of her supposed pregnancy had passed—as I was then able to convince her of her error. This woman is still living at an advanced age, and in perfect intellectual vigor.

I saw a case very recently, in this city, of a woman in wedlock, forty-eight years old. She has fatty abdominal development. She not only kept a midwife two nights watching by her bedside, but a practitioner, who has a large business, actually shared with the midwife, for several hours, the honor of supporting the perineum, for not only did they both tell me that the pains were severe, but that the perineum actually bulged forward. And the doctor declared to me that he could feel what he supposed to be the presenting fetal head, low down, and advancing under pain. I suppose he felt the uterus. When I examined this woman, in consultation with her physician, and informed her that she was not pregnant, she was ready to cry with disappointment.

The climacteric period is well known to render women obnoxious to such delusions. Reflex irritation from a morbid uterus is generally given as the explanation. No doubt this view is in many cases correct. But I confess to have seldom found in these cases any tumors or evidence of uterine or ovarian disease. It should not be forgotten that at this age in woman and at the corresponding age in men, though in the latter not usually so suddenly manifested, the nutrition of nerve centres is often materially modified, 'normal molecular change in the higher centres is not infrequently arrested.' The ovaries, womb, and mammary glands, often at this period send out their reflex irritation, affecting the mind, but quite as often they are the secondary, not the primary seat of influence; the primary changes being in the brain. In half the cases of spurious pregnancy that I have examined, there was a more or less well-defined hereditary history of insanity."

Dr. Palmer: "There is no doubt that the condition called by Simpson pseudocyesis, is no uncommon one. It is found, though less frequently, in young women, as well as in those of maturer years. Most of the cases, I believe, will be noticed in those who have already borne children. The climacteric period is, by far, the time for its special frequency.

I do not think that the knowledge of sexual intercourse is a necessary factor in the production of its symptoms. The fact that the disease exists among lower animals, may be present in the unmarried and chaste, and that symptoms similar even occur in the male, do away with such an idea.

In all the cases which have come under my observation, most of the symptoms and signs of pregnancy of the presumptive and probable kind, viz.: disturbed stomach, mammary enlargement with secretion, abdominal enlargement—motion—were more or less distinctly marked, except menstrual suppression.

So far as my memory now serves me, a complete suppression of menstruation for nine months occurred in no instance. In those cases occurring at the climacteric, there was increased and irregular menstrual intervals, but in all the remaining there was some form of disordered menstruation. At times more frequent and profuse; generally, quite scant. I was disposed to attribute these phenomena not to the spurious pregnancy itself, but to the local pelvic condition, the real disease.

In one of my cases a physical examination revealed chronic congestion of the uterus; another, subinvolution; another, sclerosis; in another, I found a cervical polypus; in another, an extra-uterine fibroid the size of an orange; in another, the cervix was in a state of well-advanced cancerous degeneration.

Morbid ovulation, seemingly, was at the bottom of the cases near the menopause.

In a word, I have been enabled, I think, to find some local pelvic disease the real source of the trouble, the symptoms of pseudocyesis being set up by reflex disturbance. *Three* of my cases passed through the usual number of months of pregnancy, and then symptoms of false labor were well marked. In these the delusion was most complete: every preparation of clothing, nurse, physician, and surrounding having been made for the expected new-comer.

The cause of the abdominal enlargement may be owing either to tympanitis, abnormal deposit of fat in the abdominal walls and omentum, particularly in women at or near the menopause; and finally, to a perverted action of the diaphragmatic and recti muscles.

As to treatment, besides assuring the patient that she is not pregnant, and correcting any derangement of the system at large, I have relied upon full doses of bromide of potassium, one of the best agents we have to correct reflex disorders. Local treatment for the local disease is indispensable."

PROF. M. B. WRIGHT: "In almost all cases of spurious pregnancy that have come under my observation, the menstrual function has been at the time properly performed. I recollect particularly a case occurring many years ago under my care at the old Commercial Hospital, in which the woman finally imagined herself in labor. She had for some months a gradually enlarging abdomen; there had been absence of menstruation and nearly all the usual signs of pregnancy. A brisk cathartic reduced her abdominal enlargement, and dispelled at once her belief that she was pregnant, there being in this case no hallucination."

DR. CARRICK: "I do not believe that in cases where hallucination really exists there is any mammary enlargement. And it seems to me that, properly speaking, false pregnancy would include cases of uterine hydatids, moles, etc., as well as the limited class to which the essayist applies the term."

DR. CLEVELAND: "All cases of pseudocyesis which I have ever seen were in women at the menopause. In one case that I now call to mind the female was not married until the approach of the climacteric, and very readily fell into the belief that she was pregnant upon observing some abdominal enlargement.

In another, where the woman fancied herself *enceinte*, the notion was inspired by movements within the abdominal walls. The motion, however, was in reality caused entirely by contractions of the muscles of the abdomen. I believe that in part this motion is voluntary."

DR. QUINN: "Some of these cases of supposed pregnancy are the result of a species of monomania—hallucinations formed without any foundation whatever. Some, though imaginary, spring from an actually existing cause, are dependent upon derangements of the uterine functions, or arise from anxiety to become a mother, or fear of the exposure of some act of impropriety. They are the result of logical deductions drawn from what would appear to be rational signs of uterogestation. I have encountered cases of each of these kinds of supposed pregnancy.

In 1850, I was called at night to a case in which the woman seemed to be suffering all the throes of travail, the apparent pains occurring at irregular intervals. There was a slight sanguineous-looking discharge from the vagina, but no enlargement of the abdomen or other physical signs of pregnancy; neither was there any dilatation of the os or symptom of parturition other than the simulated pains. The patient had borne children; was positive that she was not only pregnant, but was then in actual labor, and had her infant's clothes prepared for the occasion, spread upon the table for speedy and convenient use on the arrival of the expected stranger. Although the spurious labor pains ceased before morning, yet I remained with my patient through the night lest gestation in a very early stage should be present, and abortion or flooding supervene during my absence. Before leaving, a more thorough examination convinced me that pregnancy did not exist at any stage, and that the sanguineous-looking discharge proceeded from regular menstruation. I expressed my opinion of the case, though, from my experience at the time, with less positiveness than I now would. The woman remained incredulous and sent for me on two or three subsequent occasions, when I found the same apparent suffering, the same preparations for dressing the child, the same condition of affairs, except the discharge from the vagina. Finally, I refused to respond to a summons, although assured by the husband that there could be no mistake 'that time.' I next day learned with sorrow that the patient had actually been seized with pains and cramps of the extremities as well as abdomen, that these had been accompanied with vomiting and diarrhea, and that she had died of cholera. The presumption of pregnancy in this case was the result of hallucination, and had no foundation whatever.

During the same year I was called to another case of presumed pregnancy, though the woman did not, like the last mentioned, believe herself in labor. Having had my 'wits sharpened' I assured the woman very emphatically that she was not pregnant at all. The answer was that she had borne and raised a number of children, and knew whether she was 'in the family way' or not better than a young unmarried physician. My further services were dispensed with. Subsequent events showed that my patient was entering upon the 'critical period.' This I regarded as a case of perverted sensation from the changes taking place in the uterine system.

Quite recently I was called to a lady who supposed herself some months in her second pregnancy. In her first, suppression of menses and all the usual physical signs of utero-gestation were present. During what she supposed to be her second, they were all absent. The only reasons assigned by the lady for believing herself pregnant were, that she experienced similar sensations to those felt by her while bearing her first child, and was confident that she had felt the motion of the fetus. Her first child had died before it was a year old, and soon after its death she conceived an intense desire to become a mother again. To over-anxiety I attributed her deception, and so deeply-rooted was the delusion that when assured there was no pregnancy, she did not believe the statement and sought the opinions of other physicians. Circumstances have since convinced her of her mistake.

I have also met with cases of similar delusion in women advanced in years before a second marriage, who had raised families with the first husband and were extremely solicitous to have at least one child by the second. How many physicians are applied to by young women, who have been 'imprudent,' for the means of hiding their 'shame,' who believe that the abdomen is hardening, that the breasts are enlarging and that the motions of a child are distinctly felt, and who yet have no better foundations for their notions than morbid perceptions and sensations created by fear! The assurance of a physician in whose skill implicit confidence is placed, that the occasion for, and not the fact of, pregnancy has given rise to perverted discernment and feeling, generally removes these signs of supposed gestation.

There is still another form of supposed pregnancy in which the false impressions are not so readily dissipated. Cases are not unfrequently met with in which are present many of the presumptive and probable signs of gestation; suppressed catamenia, nausea, discoloration of the areola, enlargement of the abdomen, etc. These symptoms have deceived intelligent physicians, and for a woman to infer pregnancy from *them* is not a hallucination, which is a purely imaginative phenomenon, but a logical conclusion drawn from false premises, or at least from insufficient data."

QUARTERLY REPORT ON OBSTETRICS, GYNECOLOGY, AND PEDIATRICS.

PREPARED BY J. FEWSMITH, JR., M.D., FRANK P. FOSTER, M.D., PAUL F. MUNDÉ, M.D., AND CORNELIUS WILLIAMS, M.D.

OBSTETRICS.

1. CEPHALOTRIBE, OR CRANIOCLAST. By DR. MAX WIENER, Assistant Physician to the Polyclinic, Breslau. (*Arch. f. Gyn.*, XI., 3.)

In 1855, when the cephalotribe was used almost exclusively in labors where the head resisted extraction with the forceps, Hennig wrote a paper entitled, "Perforation and Cephalotripsy as Opposed to one Another" (Perforation und Kephalothrypsis gegeneinander gehalten), in which he answers the following three questions:

1. Does the cephalotribe generally reduce the size, or change the form of the head of the dead child in corresponding measure?

2. Does it afford a fit instrument to bring the head through the narrow pelvis?

3. Is the danger to the mother less than if, as before, the bone forceps, the blunt hook, or the obstetrical forceps be used?

He answers the first question by presentation of six experiments of his own, together with thirty made by Hersent, in nearly all of which the result showed that while the cephalotribe diminished the diameter of the head in one direction, it was increased in all others, thus affording an apparent advantage only. He claims that the cephalotribe is an instrument opposed to the first principles of physics in its action, which must be used in the dark, and offers no advantage over perforation, followed by the use of Chiari's bone forceps.

As to the second, he opposes himself to those who have recommended the application of the cephalotribe (Scanzoni, Birnbaum, and others) to the head in breech presentations, and says, that despite all mechanical contrivances, the instrûment unavoidably slips, and must give way to other means. He, therefore, denies it any special preference as an aid to delivery.

The third question he answers thus: Partly through the clumsy, heavy blades of the cephalotribe, partly through the tense portions of the head starting between its blades, partly through sharp splinters of projecting bone, which, because of want of room, are not inclosed by the blades, serious injuries may be inflicted upon the soft parts, and, under certain circumstances, bring increased danger to the mother.

Five years later Simpson brought forward the cranioclast, which was intended to replace all instruments heretofore used for diminishing and extracting the head of the child. * * * From 1865 to 1876 perforation was practiced in the Polyclinic, at Breslau, 101 times; 92 times in head, and 9 times in breech presentations. The operation was demanded most frequently in primiparæ (41 times); next, in secundiparæ (25 times), and in tertiparæ (18 times), while fewer cases of multiparæ required the operation. There were also fewer of such in the clinic.

The position was: The first, in 50 cases; the second, in 34. First face in 3. First forehead in 2; second forehead in 3 cases. The head was *above the brim of the pelvis in* 44 cases, and of these the occiput presented in 24; the parietal in 20. (Among these the postparietal, 3 times.)

The head was in the entrance of the pelvis in 9 cases; occiput presenting, 5 times; parietal, 4 times; of which the postparietal presented in 2. In 25 cases the head was *fixed deep in the entrance* of the pelvis; occiput, 15 times presenting; parietal, 9 times; postparietal, once. The forehead presented once.

Head in the cavity of the pelvis, 10 times; of these occiput, 8 times: forehead, once; face, once. * * * The time of labor, *i. e.*, from the beginning of the pains till operative interference was determined upon, was most remarkable for its variation. Thus it was:

1–10	hours	2	cases.
10–20	“	11	“
20–30	“	24	“
30–40	“	22	“
40–50	“	20	“
50–60	“	5	“
60–70	“	5	“
70–80	“	4	“
130 (?)	“	1	“

The operation was demanded because of mechanical asymetry:

Where the death of the child was ascertained, in 36 cases.

Where the mother became sick, or there was beginning inflammation of the uterus and vagina, and exhaustion, in 39 cases.

Where convinced that delivery could not be terminated spontaneously, in 23 cases.

Where the uterine contents suffered decomposition, and gas was generated within the uterus, in 10 cases.

In septic peritonitis, in 1 case.

In eclampsia, in 1 case.

In chorea major, with heart disease, in 1 case.

It should be remarked that in a not inconsiderable number of cases in the polyclinic, where perforation was practised, the aid of the polyclinic was not sought till after vain and inappropriate efforts at delivery had been made by other physicians.

Twenty cases were thus sent, and, of these 20, 2 died; 1 acquired a vesico-vaginal, and 1 a vesico-uterine fistula. In 4 other cases, turning had been attempted without success. Of these 4, 2 died.

The majority of the children were very large. Exact data cannot be given for all the children, as measurements in the polyclinic are often impracticable. The lightest child weighed 2,183 gm. (5 pounds nearly); the heaviest one, 4,666 gm. (10½ pounds nearly); the longest one measured 59 cm. The circumference of the shoulder was over 35 cm. in 33 cases.

Sixty-two were male, and 39 female. The greater number of males is by no means accidental, as it stands to reason that in narrow pelves the larger and less yielding head of the male would offer greater resistance to delivery than the head of the female—generally smaller and more yielding.

The pelves were divided as follows:

Simple flattened pelvis, 1st deg.[1]	12	cases.
" " " 2d "	14	"
Justo minor " 1st "	17	"
" " " 2d "	39	"
" " " 3d "	4	"
" " " and funnel-shaped	3	"
Obliquely narrow Diagonally " } pelvis, of each, 1	2	"
Total	91	"

Perforation was effected in 32 cases with Pajot's trephine; in 43 cases by means of the scissors of Levret and of Blot. In some cases the trephine was laid aside for the scissors, because the head evaded the pressure of the former.

HOW IS THE EXTRACTION TO BE UNDERTAKEN, AND WITH WHAT RESULT?

With the exception of nine cases in which it was desired to await the spontaneous termination of labor, extraction was practised *immediately after perforation.*

But even in the nine cases, the delivery was spontaneously effected in only two.

In seven, after many hours waiting, renewed efforts were required, either because of non-advancement, or of the advent of danger to the mother. In three cases perforation was required anew on account of closure of the opening, or because the head had assumed a position which rendered it difficult to seize. Of the seven cases, three died, and one acquired a fistula * * * "Waiting after perforation only exposes the lying-in woman to more pain and peril, and with us we have long ago given it up. *Even when there is no urgent necessity, we have for many years united extraction with perforation, because the cranioclast is an entirely harmless instrument.*"

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[1] First deg. includes narrowing to 8.5 cm.; 2d deg., to 7.0 cm.; the 3d, to 5.5 cm., and the 4th, under 5 cm.

Extraction was effected with hooks, and bone forceps (Boer's Excerebration forceps) 20 times, with cephalotribe 17 times; with cranioclast 39 times, with forceps 6 times.

Because of slipping off and tearing away of the several instruments it was found necessary to substitute another,

For Hooks and Bone Forceps..................	3 times.
" Cephalotribe..............................	11 "
" Cranioclast...............................	7 "
" Forceps...................................	2 "

With the cephalotribe extraction was done 17 times, failed 11 times; with the cranioclast 39 times, failed 7 times.

The cranioclast failed for the last time in the clinic in 1871–72, although a considerable number of extractions have been done there since that time, and in the Polyclinic also for two years extraction has not failed with the cranioclast. We have learned to use the instrument more skilfully; often, formerly, the bones only were seized, and not the overlying tissues. Naturally the instrument was torn away; now it is never allowed to be torn from its hold.

That the cranioclast was used in many grave cases follows from the comparison below, in which extraction was completed.

WITH HEAD ABOVE THE BRIM OF THE PELVIS 19 times, of which the occiput presented 10 times.

Parietal presentation..........................	8 times.
(Post-parietal presentation......................	1 time.)
Face "	1 "

Head still movable in brim of pelvis three times. (Once occiput, once parietal, once forehead presented.)

Head fixed in the brim of the pelvis eight times. (Six times occiput, twice parietal presented.)

Head in cavity of pelvis eight times. (Six times occiput, once face, once forehead presented.

As indicated above, the cranioclast was replaced by another instrument in seven cases, and the cephalotribe in 11 cases, and under the following circumstances:

A. Cranioclast with head above pelvic brim in 4 cases; with head movable in pelvic brim, 1 case; with head fixed in pelvic brim, 2 cases. These labors were terminated:

By turning and extraction	3 times.
Through extraction with cephalotribe	2 “
“ “ “ forceps	1 time.
“ Cesarean section post-mortem	1 “

(In this last case the woman died on the way to the clinic.)

B. Cephalotribe with head above pelvic brim	7 times.
“ “ “ movable in pelvic brim	1 time.
“ “ “ fixed “ “	3 times.

These labors were terminated:

Through extraction with hooks	1 time.
“ turning and extraction with hooks	2 times.
“ extraction with cranioclast	5 “
“ Cesarean section (the above case)	1 time.

The progress of the cases after cephalotripsy was,

IN THE CLINIC:

Normal in	2 cases.
Discolored ulcers in	2 “
Endocolpitis and endometritis	1 case.
Venous thrombosis	1 “
Vesico-vaginal fistula	1 “

(In this case the child was extracted with forceps after cephalotripsy had been completely effected.)

IN THE POLYCLINIC:

Endometritis and endocolpitis in	2 cases.
Parametritis sinistra in	1 case.

Particulars are wanting in the other cases.

It is noteworthy that in those instances where endometritis or endocolpitis appeared, either repeated cephalotripsy or repeated attempts with the forceps had been practised.

The progress of the cases in which cranioclasm was done were,

IN THE CLINIC:

Normal in	11 cases.

(In one case there was intestinal catarrh, and in one a phlegmon of left arm as complications.)

Metritis and endometritis in	2 cases.

In those cases which are not reported upon, nothing unusual occurred.

In the Polyclinic:

Normal in	4 cases.
Endometritis in	1 case.
Ulcers, septicemia, pleuritis dextra, of each	1 "
Fever in	2 cases.
Vesico-vaginal fistula in	4 "

(In one of these cases long-continued efforts at delivery had been made with the forceps by a physician.)

The four cases in which vesico-vaginal fistula occurred, it should be remarked, were all conducted by the same assistant.

In the Clinic there was, after extraction with hooks, peritonitis in one case, and endometritis in one case. In the Polyclinic, endometritis in four cases, and peritonitis in three cases. (In these three, the forceps had been applied in vain.)

Of the 101 cases, 26 died, equal 25.7 per cent.; of these there were 9 lethal cases after 39 perforations in the Clinic, and 17 after 62 perforations in the Polyclinic. (In one case the mother died a few moments before completion of perforation; it is of course not counted in.)

No death has occurred after perforation in the Clinic from 1871–77, there having been 17 cases during that period.

Of the 26 deaths delivery was effected after perforation, with the cephalotribe, 7 times; with cranioclast, 7 times; forceps, 3 times; hooks, 3 times; by turning and extraction, 3 times, by traction on the head (the body being born); one woman died during extraction, and in one case no particulars are given. *In the Clinic*, between cephalotribe and cranioclast the cases are divided as follows: cephalotribe, 10 cases with 4 deaths; cranioclast, 18 cases with no deaths; forceps, 4 cases with 2 deaths; hooks, 1 cases with 3 deaths. *Polyclinic:* cephalotribe, 7 cases with 3 deaths; cranioclast. 21 cases with 7 deaths; forceps, 3 cases with 1 death; hooks, 16 cases with no deaths. In labors completed by cephalotribe the pelvis was flattened in 1 case 1st deg.; in 1 case to 2d deg. Justo minor pelvis 2d deg., 2 cases; obliquely narrowed pelvis in 1 case.

In those where cranioclast was employed there was:

Flattened pelvis 1st deg. in	1 case.
" " 2d "	1 "
Justo-minor pelvis, 1st deg. in	1 "
" " 2d "	2 cases.

Forceps employed:

Narrow pelvis, 1st deg.	1 case.
" " 2d "	2 cases.

Hooks used:

Narrow pelvis, 1st deg.	1 case.
" " 2d "	3 cases.

If we now formulate the most important facts which have been brought out by this collation we arrive at the following results:

1st.—When the necessity for perforation is recognized, other efforts at delivery, especially with the forceps, should be left untried, as they are mostly dangerous to the soft parts because of unfavorable positions of the head and relations of the pelvis.

2d.—Extraction, when possible, should be united with perforation, for immediate extraction when properly carried out is not harmful, while nothing is attained by waiting; the position in most cases is changed for the worse, and generally extraction must be resorted to in the end.

3d.—The cephalotribe, on account of its very slight cranial curvature, slips off very easily, especially where the head lies high in the pelvis, because in these cases the head cannot be seized, and on account of the peculiar position only a segment is accessible, upon the crushed portion of which no tenable hold can be obtained.

Hennig relates that in 138 cases, slipping off of the cephalotribe happened 23 times; he also mentions others in great numbers who have been obliged to lay aside the cephalotribe for some other instrument, yet Hennig seems to concur with the opinion expressed by Busch, that the evacuation of the brain and consequent diminution of the elasticity of the head not only rendered the hold of the instrument more secure, but in high degree diminishes the amount of force required to be used on the part of the accoucheur. The majority of obstetricians, however, contradict this, and assert that after loss of the brain the cranial walls are crushed by the cephalotribe and thereby its firm hold is lost. Mundé (AM. JOURNAL OBSTET., vol. vi., p. 8) was unable in three cases out of four to obtain a firm hold with the cephalotribe, though repeatedly tried. See also his fourth case, where the perforating cephalotribe of Scanzoni slipped. The same case teaches an important lesson in operative obstetrics, for the point which perforated the head, passed also through it and into the shoulder; it might as easily have entered the uterine wall!

4th.—The cephalotribe renders extraction more difficult in that it crushes the head in one direction, enlarging it in the opposite one.

The instrument must almost always be applied in the oblique diameter of the pelvis, and thereby materially elongates the axis of the head lying in the conjugate diameter of the pelvis and increases the obstacle to delivery. According to Simpson (*Clinical Lectures on Dis. Women*, p. 522), so considerable a portion of the skull may be thus forced over the symphysis that extraction is next to impossible. Hennig also emphasizes this point, and in the face of these facts expresses his surprise how clinicists are able to decide in a given case to the fraction of an inch, in view also of the difficulties as to the relation between the child's head and the narrow pelvis, when the cephalotribe may be employed. How one may operate with the cephalotribe in a pelvis with a conjugate diameter of 2 ctm. (Baudelocque, Cazeaux, Riecke, etc.) is to him incomprehensible. In order to remedy this unilateral and unsatisfactory diminution of the head, it has been proposed to rotate the head so that its long axis as produced by the cephalotribe, and now in the conjugate, shall be brought into the oblique diameter of the pelvis, and for this purpose to reapply the instrument. That this manipulation is not without danger, the adherents of the plan, themselves, are obliged to confess. How easy it must be in this rotation to carry the wall of the vagina with the head, to overdistend and crush it! In any event a cephalotribe, to carry out this manipulation, would require to be without the pelvic curve, else the arc which it must describe would be too great.

5th.—The cephalotribe often produces wounding, because it is too heavy. At the same time the difficulty of introducing thick blades along the side of the head in narrow pelves is considerable. Further, the blades of the cephalotribe rub as do the blades of the forceps, in extraction and in the motions given it for purposes of leverage. Finally, wounds are thus produced, when the instrument is closed, and the tense projecting segments of the head, and sharp splinters of bone are brought into dangerous contact with the obstetrical passages.

6th.—More serious results follow cephalotripsy than cranioclasm. This is shown by our statistics and by the reports of Braun's clinic (Mundé, AM. JOURN. OBS., vol. vi., p. 19.)

7th.—The cranioclast hardly ever slips off when in careful hands, if at the same time the rule given by Simpson be followed—to pass the inner blade as far as possible against the base of the skull, and to seize the jaw and adjacent tissues with the other. Mundé also maintains that if the cranioclast is applied over the forehead and face it scarcely ever tears away. But the instrument may also find firm hold upon other portions of the head if care is only taken to *include* *the scalp* with the bone. If a piece of bone threatens to come away, then, as a matter of course, the instrument is taken off and reapplied. For this purpose it is only necessary to remove the outer branch ; the inner one may be easily turned inside the skull. If the tissues are seized high up next to the neck, then the traction acts directly on the buttocks. Rokitansky calls attention to the fact that in 52 cases in Braun's clinic, and in six of his own, the cranioclast never once slipped off or tore out. The instrument was applied with favorable results, five times upon the retained head, the perforator having penetrated the base of the skull or temple.

Simpson himself speaks of it as follows (p. 536): "The cranioclast is intrinsically the most effective extraction instrument. In my experiments it has seldom or never happened to me that the instrument slipped off when a sufficient hold was obtained, and the preceding diminution of the head in no way prevents its being a sufficient and secure instrument for seizure and extraction.

Simpson certainly states (pp. 527 and 528) that he also uses the cranioclast as a diminishing instrument for the head. For this purpose he seizes the head with the cranioclast, and using the instrument as a lever, breaks or luxates one of either the parietal, frontal, or temporal bones; he does not remove the bone, however, but leaves the further reduction of the head to the pains. Wounding of the maternal parts does not subsequently occur, because the scalp covers the broken bones. This method of reduction of the head is to be discriminated from craniotomy as formerly practised, in which scissors or forceps were insinuated between the skull and scalp, the bones broken and removed by pieces. Besides, the cranioclast has undergone such improvement lately (elongation of its members, the addition of a compression apparatus, etc., etc.), that in its present form it is a much more fitting instrument for extraction than as originally proposed by Simpson. Mundé (l. c. p. 14,) justly remarks that it would be more appropriately called a cranio(ex)tractor, than a cranioclast. In spite of all this, Kleinwächter claims that the cranioclast is nothing more than the so-called duckbill of Jac. Rueff of 300 years ago, and that the duckbill was nothing more than a bone forceps designed for breaking and withdrawing the bones of the skull.

Inasmuch as the cranioclast is intended to work upon an entirely different principle, it is difficult to see how Kleinwächter could have come to such a conclusion.

At any rate we use the cranioclast only for extraction, and for this purpose it satisfies every desire.

8th.—The cranioclast, on account of its lesser circumference, can be applied in smaller space than the cephalotribe. With it, it is possible to elect the place of seizure, and one is not compelled, as with the cephalotribe, to operate in only one diameter of the pelvis.

Rokitansky maintains that the application of the cranioclast is possible in every diameter of the pelvis, and never encounters the difficulties of the cephalotribe, and further, the cranioclast demands a smaller field of operation than the cephalotribe, because of its absolutely smaller size, which is still more relatively diminished in that the larger limb is placed within the child's skull.

9th.—The cranioclast completes extraction much more surely than the cephalotribe, in narrow pelves, because unlike the latter it does not diminish the head in only one direction at the cost of increasing its diameter in another, but that in withdrawing the head it is converted into an ovoid ball, with its apex in front and its entire circumference diminished in proportion. Yet Kleinwächter claims that when the pelvis is narrow the portion seized by the cranioclast will certainly tear off without bringing down the head. It is worthy of note, that we do not have this experience in Breslau, by any means; indeed we use the cranioclast for still another purpose. As is well known, the head almost always rests in narrow pelves rotated upon its sagittal axis at the brim of the pelvis. In this position it is difficult to pull the head through, but by carefully using the cranioclast as a lever, the upper parietal may be brought down under the promontory or the symphysis, and the position thereby materially improved. The cephalotribe cannot be used for such a purpose.

10th.—The cranioclast wounds much less often than the cephalotribe, because it is much more slenderly built, hence not the whole hand, but only two fingers are needed for its introduction. Further, the outer branch, when properly introduced, is entirely covered by the scalp which rises up on both sides of it, so that it can hardly do injury to the soft parts through pressure.

11th.—Cranioclasm supplants all other methods of extraction in that, (a) it is much easier and simpler to carry out; (b) less dangerous to the maternal passages than craniotomy, in which the bones must be removed piece by piece; (c) diminution of the base of the skull—and this is a cardinal point—is much more effectively obtained than in craniotomy. Those difficult cases which had resisted other means of extraction were, as already observed, terminated by its aid; the chin was diverted, the inner branch being placed in the mouth and skull cavity, the outer one over the forehead and face, and thus with the chin in advance, the head extracted. This instrument then has an extraordinarily firm hold, and through traction the base of the skull is sufficiently diminished. The extraction of the head is facilitated in that the skull is drawn out in the form of a cylinder, so that the mento-occipital diameter comes in the line of traction, and the short submento-parietal (trachelo-parietal) diameter in the sagittal direction is brought into the narrow part of the pelvis.

We see, therefore, that the introduction of the cranioclast in operative midwifery is a great service, and not, as Kleinwächter pretends, a retrogression toward the time of *medicina crudelis*. C. W.

2. ON THE REPETITION OF MULTIPLE BIRTHS. By DR. ALBERT PUECH, of Nîmes, France. (*Annales de Gynécol.*, *April*, 1877.)

After citing numerous instances from his own experience and literature, where plural births occurred in rapid succession in the same woman, and discussing the probable causes of such fecundity, the author arrives at the following conclusion:

1. Plural births are observed in the same women twice, three, four, five, six, and even more times.

2. The more children there are at each delivery the less probability there is of a repetition, and the more repetitions there have been the less frequent is the fact.

3. These data, furnished by literature and daily observation, are confirmed by statistics. Of 1262 multiple deliveries occurring between the years 1790 and 1875 in the city of Nimes, there was forty-eight times a double, twice a triple, and once a quadruple repetition. Thus, including the still-born, there was one double repetition in 2,669, one triple in 65,000, and one quadruple in 130,000.

4. Only nine times were the mothers primiparæ. The youngest at the time of the first double birth was twenty years old, the oldest thirty-six; at the second double delivery the youngest was twenty-four, the oldest forty-three years of age.

5. The repetition is either immediate or mediate, that is, interrupted by single deliveries; it is sometimes indirect, and sometimes direct, that is, consisting of multiple births, but varying in the number of products.

6. The interval existing between the two multiple deliveries varies greatly; the minimum being 327 days, the maximum eighteen years. In seventeen cases it has been less than two years; in eleven cases, less than four years; in eleven cases less than six years. Between six and ten years there are reported ten cases, and five between ten and eighteen years.

7. The births are rarely similar as regards the sex of the infant, those of a boy and girl markedly exceeding the others.

8. The sex has more frequently been female than in the isolated plural births; the former even predominate in an abnormal manner, for there was a proportion of 124 girls to 89 boys.

9. The repetition of multiple labors seems to depend on the existence of unusually developed ovaries. P. F. M.

3. APHORISMS ON THE RUPTURE OF THE MEMBRANES. By PROF. ALOIS VALENTA, of Laibach. (*Memorabilien*, XXII., 7, 1877.)

Under this title the author sums up the conclusions arrived at by him from 2,600 confinements, in 487 of which the membranes were artificially ruptured, as follows: 1. In nearly every fifth labor the artificial rupture of the membranes is called for. 2. The artificial rupture is much more frequently necessary in primiparæ than in multiparæ. 3. The spontaneous rupture of the membranes increases in proportion to the greater number of labors. 4. In plural births the artificial rupture is most frequently required. 5. In premature labors the artificial rupture is most rarely necessary. 6. In plural births the normal rupture of the membranes almost never occurs, but it generally happens prematurely or by artificial means. 7. The normal rupture occurs most frequently in premature labors. 8. With male children it is more frequently necessary to rupture the membranes than with female ova. 9. In vertex presentations the artificial rupture is unquestionably least called for. 10. In face presentations the natural rupture is most frequent; and, 11. In transverse presentations most rare. 12. The artificial rupture of the membranes in any case is most common when the presenting part appears at the vulva. 13. Up to the normal termination of the period of dilatation of the os, the artificial rupture becomes necessary about once in every twenty-three labors, or in 4.4 per cent. 14. In primiparæ the membranes are tougher and more resistant than in multiparæ. 15. In multiparæ the necessity of rupturing the membranes when the os is fully dilated is relatively more frequent than in primiparæ. 16. With increasing age of the woman, as a rule, the frequency of the normal rupture increases, and that of the artificial rupture decreases. 17. The older a primipara the more rare is the artificial rupture. 18. The normal rupture is most rare in primiparæ from thirty-six to forty years of age; in multiparæ from fifteen to twenty years. 19. The artificial rupture as such does not exert an injurious influence on the mother. 20. After labors with artificial rupture there are decidedly less puerperal diseases and nearly as many deaths as after labors with natural rupture. 21. The artificial rupture, performed at the proper moment, is of evident benefit to the life of the child. 22. The so-called polypoid prolapsus of the bag of waters generally indicates the death of the child. 23. The artificial rupture as such generally suffices to attain the desired object, namely, the spontaneous completion of the labor. 24. The artificial rupture of the membranes is chiefly an oxytocic agent. P. F. M.

4. On Conception-Fever, or, the Febrile Action Indicating the Occurrence of Conception. By Dr. Rohde, Braunsburg. (*Allg. Med. Centr. Zeit., Aug.* 11, 1877.)

It is well known that many women are able to state the exact day of conception, but a satisfactory explanation has thus far been wanting. R. says that years ago he noticed that in one case an irregular, rather painful, menstruation, ushered in by a brisk febrile excitement of several days' duration, was the last before impregnation. The woman had never before suffered from menstrual pain or irregularity. His attention now being directed to anomalies during the menstrual epoch, he observed that febrile action at that time was not uncommon ; that, indeed, women were more liable to it on slight causes then, than at other times. As a rule, however, a cold or some temporary reason, could be found for the fever. But in several cases he chanced to ascertain that a menstrual period ushered in by fever, and in two entirely healthy women the occurrence of a remittent fever, one to two weeks before the last period, exactly corresponded with the date of the subsequent delivery. The flow itself was normal, rather more profuse than usual. The height of the fever in one case reached 40.6° C. (104.6° F.), and was accompanied by a chill; generally it did not exceed 39° C. (102° F.) Repeated chilliness was always present. The fever remitted in the morning and lasted two to four days, gradually sinking to the normal condition, generally with the commencement of the menstrual flow. The pulse and respiration corresponded in frequency with the temperature.

Of six cases R. possesses notes ; of as many more he has noted only the febrile excitement. Unfortunately, he says, the confidential manner in which he, as family physician, acquired these data, and the smallness of the town in which he resides, forbid his confirming his assertions by the names of the parties.

R.'s observations justify him in assuming that *every conception rapidly excites general febrile action.* This fever is generally so slight, immediately preceding or coinciding with the menstrual flow upon which it is supposed to depend, that medical aid is not sought for it. The conception fever is neither so evanescent nor trivial, however, as to attract the attention only of women of the more delicate and intelligent classes. R. says, that women of the middle and laboring population have frequently, in answer to his questions, stated as quite a matter of course, that they knew the fertile coitus by a certain degree of chilliness and general discomfort following it. One woman, who had borne six children, stated, voluntarily, that she had always known the date of conception by the occurrence of headache and nausea about an hour after intercourse, and by general lassitude and depression during the following two or three days. The date of conception, in her case, was entirely independent of the beginning of the menstrual flow; indeed, she conceived several times during the menopause of lactation. Another woman, forty years of age, who had not conceived for seven years, and had given up all thoughts of again becoming a mother, distinctly noticed this peculiar febrile reaction following a coitus, soon experienced the usual signs of pregnancy, and was confined at term, reckoning from the date of the fever.

Of the authors on Obstetrics, only Busch mentions that a fertile coitus "is generally followed by lassitude, malaise, sensation of drawing, warmth and fulness in the abdomen, slight chilliness, extending from the abdomen or sacrum," occasionally "general excitement and increased sensitiveness." As a sign of impregnation Busch notes "chilliness alternating with feverishness." Brunner, in his work on "The Infectious Diseases from an Etiological Standpoint," 1876, states that in malarial regions, the occurrence of conception particularly disposes to an attack of intermittent fever, so that an attack at the menstrual period always led him to diagnose the inception of pregnancy. R. observed one case, where he mistook the febrile action occurring in the intermenstrual period for malaria, and gave quinine; the result showed that it was merely the fever of impregnation. These observations are sufficiently interesting and important as regards the calculation of the duration of pregnancy and the probable date of delivery, to call for extensive investigation, which is easily made by simply noting the date of the febrile reaction, when met with, or elicited on inquiry, and then comparing it with the date of the subsequent delivery. P. F. M.

5. ON THE TREATMENT OF MASTITIS. By EDGAR KURZ, Florence, Italy. (*Memorabilien* 6, 1877.)

During two years of his services as assistant surgeon to the Lying-in service at Tübingen, the author treated the very frequent cases of commencing mastitis in the following manner: When the breast is tense with milk and becomes hard and sensitive, it frequently suffices merely to restrict the diet of the patient, and to remove the superabundant milk by nursing several children, or drawing it out with one of the various appliances devised for the purpose, or by gently expressing it. When the affection has advanced a step farther, and the breast is much swollen and lumpy, and the skin reddened, and suppuration appears imminent, it is necessary to adopt energetic measures. The diet is still more restricted, laxatives are given, the breast is securely bound up by a cloth, without, however, exerting compression, which is suitable only for chronic cases, or the residual nodosity following acute mastitis. The *main point* of the treatment is the *application of cold*, which in light cases consists merely in iced compresses; in severe cases in the unremitting application of a bladder filled with ice. The often intolerable pain, which is increased by compression, yields rapidly to this treatment, the tension decreases, suppuration is prevented, and in a few days even mastitis may be cut short in this manner. During two years of this treatment, not one case of mastitis terminated in suppuration, whilst under compression it frequently occurred. P. F. M.

6. AMPUTATION OF UTERUS AND OVARIES AS A SAFEGUARD AGAINST HEMORRHAGE AND OTHER ACCIDENTS AFTER CESAREAN SECTION. By Prof. ED. PORRO, of Pavia. (*Annali Univ. di medic. et chir.*)

Contrasting the unfavorable results of the Cesarean operation with those following laparo-, hystero-, and ovariotomy, which he attributes to the want of closure of the uterine wound, the extravasation of blood, and later of purulent material into the abdominal cavity and consequent septic absorption, the author conceived the idea of entirely removing the uterus and ovaries, and performed the operation successfully in one case, both mother and child being saved. The uterus was constricted at the internal os, and cut off close with curved scissors; hemorrhage slight. The stump was 2 ctm. long and 2.5 ctm. thick, and was fixed in the lower angle of the abdominal wound, a drainage tube being passed through into the vagina. Antiseptic injections were used during the puerperal state, which was complicated by light peritonitic symptoms, vulvo-vaginitis, pleuritis, and lymphangoitis, all of which the patient survived, returning to her house after five weeks. No unpleasant symptoms whatever were experienced during walking, running, or any exertion. Twice only, at the regular interval, did menstrual molimina present themselves (a portion of the left ovary having been left *in situ*), the uterine stump tumefied, and for four days discharged a few drops of a liquid viscid fluid. The author gives the following indications for the amputation of the uterus and ovaries during Cesarean section: 1. Profuse, uncontrollable hemorrhage. 2. Severe injuries or lesions of the uterine tissue (perforation, gangrene), produced either by protracted labor or efforts at delivery, which would render it dangerous or fatal to leave the uterus in the abdominal cavity. 3. Large tumors of the uterus or ovaries, which would probably necessitate subsequent laparotomy. 4. The laceration and eversion of the edges of the uterine wound (as in Porro's case), preventing union by first intention. 5. Firm, extensive, inseparable adhesion of placenta. 6. Malformation and stenosis of the utero-vaginal passage, and existing vesico or recto-vaginal fistula. (This latter indication appears to us absolutely unjustifiable.—Rep.) 7. This operation is always called for when the entire ablation of the internal generative organs has been shown by experience to be more favorable to the mother than the mere opening of those organs by the knife. P. F. M.

7. Drainage of the Puerperal Uterus. By Carl Langenbuch, Berlin. (*Berlin Zeitschr. f. Geb. u. Gyn.* II. 1. 1877.)

8. On Intrauterine Injections of Carbolic Acid in the Puerperal State. By W. Schülein, Berlin. (*Ibid.*)

9. On Irrigation of the Uterine Cavity with Carbolic Acid Solution, and the Salicylic Acid Treatment during Puerperality. By Carl Richter, Berlin. (*Ibid.*)

10. The Strictly Antiseptic Treatment of Puerperal Wounds. Preliminary Note. By Adrian Schücking, Halle. (*Centralbl. für Gynäk.*, 3, 1877.)

1. Langenbuch claims to have employed puerperal drainage as far back as 1872, and appears to enjoy the right of priority in this respect, the papers by Fritsch (The Local Treatment of Puerperal Fever, *Klin. Vortr.*, 107, 1876) and Schede (Drainage of the Uterus in Puerperal Septicemia, *Berlin Klin. Woch.*, 23, 1877) not having appeared till quite recently. L. first practised intrauterine carbolic injections in 1872, in an apparently hopeless case of septicemia, accompanying retention and decomposition of placental fragments, saving his patient, after losing an entirely similar case shortly before, in which no injections were used. It occurred to him that perma-

nent drainage would be a valuable and convenient adjuvant or substitute for injections, and a case at term soon presented itself in which it was successfully employed, both ends of the rubber drainage-tube being passed into the uterus through a Sims' speculum, and carbolic injections being made besides. In this and one other case of septic puerperal endometritis and metritis, drainage and injections combined were used with such success (in the latter case the drainage-tube remaining in utero nineteen days) that the author finds himself justified in concluding "that intrauterine drainage, while neither injuring nor irritating the uterus, is able rapidly to allay, or aid in allaying, an inflammatory affection of that organ; that it effectively promotes the discharge of the lochia and putrid contents of the uterus, and thereby in itself contributes an important factor to recovery; and thus it facilitates intrauterine injections and the return of the antiseptic fluid." Although drainage and injections together should be recommended, the omission of the latter for several days in one case without detriment, convinced L. that uterine drainage is effective even without intrauterine injections.

The philosophy of the action of intrauterine irrigation and drainage in reducing septic fever and preventing its recurrence, is explained by L. as follows: The inflammatory infiltration of an infected wound can persist and increase only if the infectious processes at the surface are maintained and fed; reproduction of the septic material then occurs, and these reproductive processes in the wound produce, so to speak, a *vis a tergo*, which continually drives new broods of infectious germs into the canals and meshes of the wound-tissue, thereby spreading the inflammation, which L. believes to be a defensive reaction of the tissues against the intruders. If now this *vis a tergo* is paralyzed and annulled by regular disinfection and cleansing of the surface of the wound, its results also disappear, the inflammatory reaction subsides, the reproduction of the septic material gradually ceases, and the septic fever, for want of pabulum, vanishes. Such a wound of the largest dimensions and greatest susceptibility, is the cavity of the puerperal uterus; and experience now shows that a rational antiseptic treatment of the cavity, based on surgical principles—irrigation with a 1 to 2 per cent. carbolic solution and drainage—is the main reliance in puerperal septicemia.

II. SCHÜLEIN reports the system and results of the local antiseptic treatment instituted since October, 1876, at the Maternity Hospital in Berlin, under the direction of Prof. Carl Schroeder. Every parturient woman, in whom the liquor amnii or vaginal discharge was offensive, or whose labor was unusually tedious or difficult (contracted pelvis, placenta previa, face presentations, etc.), was treated with repeated vaginal injections of a 3 per cent. carbolic solution before delivery; and *every* newly-delivered woman received an intrauterine and vaginal injection of one quart of the same solution. The use of the patients for purposes of study by students and midwives, rendered this sweeping precaution advisable. In several cases with particularly offensive discharge, a 5 per cent. solution was even injected. A good feature of these intrauterine injections is the excitation of the uterus to firm contraction, and consequent avoidance of post-partum hemorrhage. The injections were continued during the puerperal state, whenever a suspicion of infection existed, such as sensitiveness of the uterus or parametrium, offensiveness or suppression of the lochia, rise of temperature above 38.5° C. (101.5° F.), or frequent pulse with normal temperature, which last sign S. considers most indicative of infection and calling for local treatment. The modus operandi of the injections is explained in the same manner as by Langenbuch, the absorption of septic material at intervals being pretty well proved by the successive chills.

Former writers, such as Grünewaldt (about 1840), Winckel, Bischoff in Bâle, Haase and Beinlich, in the Berlin Charité, and Münster, have recommended puerperal intrauterine injections, but feared the introduction of air. Schülein avoids this accident very readily by using a (so-called Hildebrand's) large bent glass tube and an irrigator (employing precautions familiar to us all. He is obliged to introduce the tube on the finger in the cervix, and the main opening of the tube is at its point; in both of these respects this tube seems to us decidedly inferior to that devised and used by Dr. Wm. M. Chamberlain of this city, which we have repeatedly employed with facility and marked benefit.[1]—REP.) S. states that in the majority of cases within several hours after the injection, both temperature and pulse fell, even to the normal rate.

According to Schroeder, the period of incubation of infectious matter is within two days; therefore, those cases in which rise of temperature or pulse occurred during the first two days after delivery, appeared most suspicious as having been infected during labor.

Of 287 women delivered, 81 fell ill with some, often very slight, affection. In 26 only one injection was required, in 29 cases more were necessary, generally only 3 or 4, once as many as 14. In 201 cases merely prophylactic injections were made. Of these 81 sick cases, 7, or 2.4 per cent., died, a percentage which in no wise states the true facts, inasmuch as all of these deaths were from otherwise usually fatal affections, and independent of infection, viz.: one with postpartum hemorrhage after placenta previa; two with rupture of uterus; two with eclampsia and edema pulmonum; one with abscesses of liver; one after Cesarean section. The mortality percentage, therefore, from septic infection, should be zero.

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[1] See this Journal, Oct., 1877. Trans., p. 644.

In conclusion S. gives the following deductions:

1. Intrauterine injections, with proper precautions, are entirely innocuous.

2. The ratio of mortality by septic puerperal infection can be effectually diminished by their employment.

3. Grave affections are much more easily prevented by them than by any other treatment.

4. The temperature frequently falls considerably within a few hours after the injection.

III.—Richter has contributed the longest paper on this subject, covering fifty seven pages, of which we can, of course, give but a very brief review, especially as a portion of the views and statements expressed (such as the nature of puerperal septic infection and the action of antiseptic injections) coincide entirely with those mentioned in the preceding articles. Intrauterine injections, with antiseptic fluids, were used by the author's predecessors in the Charité Maternity since 1874, but no detailed results published. During R.'s service the injections were made both prophylactically under the same indications as stated by Schülein, and therapeutically, when symptoms of infection were already present, and continued in the first instance as long as shreds or coagula came away with the water; in the second, as long as temperature and pulse remained above the normal rate. The results in both classes of cases were exceedingly satisfactory, and there can be no question that serious puerperal disease was prevented, the union of perineal lacerations (closed by sutures or not) materially secured, and already beginning septic infection and local inflammation arrested by the frequent employment of these antiseptic uterine injections. Like Schülein, R. used the curved glass tube, for which he claims as an advantage over the formerly employed Nélaton's catheter with small lateral holes, that its widely-open point permits its introduction only just within the internal os, whence the strong jet of water distends and thoroughly washes out the cavity. (We confess that the danger of dislodging the fresh thrombi in the placental sinuses, and perhaps, after all, of forcing fluid through the Fallopian tubes, would lead us to eschew the use of the strong central jet, and prefer steady, gentle irrigation through the lateral apertures of Chamberlain's glass tube, which we have repeatedly passed to the fundus without pain or injury, and which quite effectively washes out all débris.—Rep.) R. has assured himself during the 3,000 injections made by him, that the fluid always escapes readily at the side of the tube, and that the occasional edema of the lips of the cervix, which would seem to be an obstacle, yields spontaneously to the warm fluid. The injections, according to R., are absolutely painless and innocuous; in a few cases only, in which the water injected was cold, did a slight rigor, with abdominal pain and temporary rise of temperature and pulse, and twice light hystero-epileptiform attacks, follow the injection, without, however, being attended by any evil consequences whatever.

The beneficial results of uterine irrigation were self-evident, a falling of temperature of 0.5 to 3.5° C. (1 to 6° F.), and of the pulse of 30 to 40 beats within one or two hours after a simple irrigation, being frequently noted. Particularly in commencing endometritis or parametritis did the injections prove beneficial, and a retention of the lochia with slight rise in temperature and abdominal tenderness, frequently a sign of serious trouble, was infallibly overcome by a few injections. In five-sixths of these latter cases one injection sufficed.

The good effects of irrigation were, in R.'s opinion, materially assisted by three remedies, which were applied in all serious cases:

1. The constant application of ice to the abdomen, in all inflammatory conditions of the genitalia, uterus, vagina, and mammæ. In all of these conditions ice proved itself eminently useful; only in the after-treatment of metrorrhagia arrested by hot-water irrigation did the ice-bladder exert a positively injurious effect, a subject which R. proposes to discuss more fully in a future paper.

2. Local depletion, particularly by leeches, applied at the very beginning to the hypogastrium.

3. Salicylic acid, or preferably, after finding that puerperæ were often unpleasantly affected by large doses of the pure acid, the salicylate of soda, in powders of 2 grammes (30 grains) morning and evening, or of 1 gramme three or four times, or generally 0.5 gramme (8 grains) four to eight times a day. These doses were continued until temperature and pulse were again normal.

The treatment of puerperal disease pursued by Richter may be briefly stated as follows: As soon as the lochia became offensive or arrested, or offensive placental débris or coagula were discharged, or the temperature or pulse rose, or any inflammatory reaction in the genital tract appeared, or the uterine region and surroundings became sensitive, or the broad ligaments appeared swollen—at once the uterine cavity and vagina were thoroughly washed out, first with a 3 per cent., then with a 2 per cent. carbolic solution, two or three times a day; the permanent ice-bladder was applied, preceded, if indicated, by leeches; and, according to the severity of the symptoms, first salicylate of soda in doses of 1 to 2 grammes, later of 0.5 gramme several times a day. The ice was continued so long as sensitiveness remained; the irrigations and soda salicyl., until pulse and temperature were reduced to the normal.

It should be mentioned that a combination of sulphate of quinia (0.5 grm.) with soda salicyl. (1 to 2 grm.) could be relied upon with tolerable certainty, although but temporarily, to reduce the high temperature, without causing salicylic intoxication; a 10 per cent. solution of carbolic acid was very useful as a local application to fibrinous and gangrenous wounds.

The material on which the present article is founded consists of some 200 puerperæ, on whom nearly 3,000 irrigations were practised, for precautionary or therapeutical reasons above stated. Of these 200, only 33 were seized with severe puerperal disease, complicated with exudation of lymph; that is about 5 per cent. of all women delivered in the institution at that time, 21.43 per cent. of all those taken ill, and 17.75 per cent. of all those treated by irrigation. Of these 33, 14 were serious, and 19 very serious cases; and 9 died, or 27.27 per cent. of the severe cases, 5.86 per cent. of all the sick, 4.83 per cent. of all those treated by irrigation, and 1.6 per cent. of all delivered. This latter percentage is smaller than the one of the preceding year (1.92 per cent.), and really favorable when the use of the patients during the whole year for purposes of instruction is taken into consideration.

In conclusion, R. states that injections of hot water (40° Reaumur = 122° F.) were made by him for metrorrhagia (post-partum hemorrhage) in over 100 cases, and always with immediate favorable result.

The article is worthy of careful study, and we refer to it for more detailed information.

IV. Schücking has devised a system of permanent antiseptic irrigation of the uterus, which he claims to be an absolutely sure preventive of puerperal sepsis. He has treated five puerperæ after exceedingly severe labors, and three cases of puerperal fever with this method; the former all remained well with the exception of slight fever at night (not exceeding 38.4° C. = 101° F.), and the latter recovered rapidly. His method is the following: A large metal catheter cut off at the end and connected with a freely perforated metal drainage tube, is wrapped with Lister's gauze, the latter forming a thick roll at the vaginal end of the catheter. The latter is introduced into the uterus, the drainage tube reaching about to the internal os, and serving as means of exit to the injected fluid; the gauze is intended to bring the disinfectant in close and permanent contact with every portion of the endometrium and vagina, to prevent the occlusion of the catheter by coagula, and to supply the place of the irrigation when the latter is interrupted. The patient lies on a pan with drainage tube attached. Immediately after labor the gauze-covered catheter is introduced to the fundus, and a short injection made of a 5 per cent. solution of carbolic acid. The stop-cock affixed to the catheter is then so turned as to prolong the emptying of the irrigator during several hours, and the latter filled with the permanent fluid, consisting of a 10 per cent. solution of sulphide of sodium with 5 per cent. of glycerine. This solution is well borne and entirely innocuous. Every twelve hours the catheter is removed, covered with fresh carbolized gauze, and reintroduced. If proper attention is paid to the bedding of the puerpera this treatment may be persisted in for a week without inconvenience. Should a septic process already exist, the sodium fluid should alternate with a 3 per cent. carbolic acid irrigation. This method of permanent irrigation will of course apply equally well to all surgical procedures on the internal genital organs. Its indications may be briefly stated as follows: 1. Prophylactically in healthy puerperæ (*a*), after severe protracted labors (*b*), during a puerperal fever epidemic. 2. In all cases of septic puerperal disease, which are still amenable to treatment. 3. In all major operative procedures on the female genital organs, with or without septic discharge.

A similar recommendation as regards the introduction of a drainage-tube into the uterus, per vaginam, has lately been made by Max Schede,[1] who does not materially differ from Schücking. P. F. M.

11. THE GLUTEO-DORSAL POSITION IN OBSTETRICAL PRACTICE. BY G. STEHBERGER, Mannheim. (*Zeitsch. für Geb. u. Gyn. Berlin*, II., 1, 1877.)

The author briefly sums up the results of his reflections on the employment of the gluteo-dorsal position (that employed by Simon while operating for vesico-vaginal fistula, on the back with the thighs sharply flexed on the abdomen) as follows:

a. The ordinary dorsal position hitherto generally employed is permissible only in easy forceps extractions at the outlet in multiparæ called for by tedious labor, when there is no danger of perineal rupture.

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[1] Berl. klin. Woch., 1877, 23.

b. In outlet forceps extractions in primiparæ and when there is danger of perineal rupture, the lateral or gluteo-dorsal decubitus is preferable.

c. In operations on the head in the superior strait, especially difficult forceps cases and with pendulous abdomen, the gluteo-dorsal position is the most practical and preferable to the lateral decubitus customary in England.

d. The gluteo-dorsal position is also most convenient for the union by sutures of fresh and deep perineo-vaginal lacerations, as well as for internal pelvimetry. P. F. M.

GYNECOLOGY.

12. On the Relation of Laceration of the Cervix to Carcinoma Uteri. By Prof. Breisky, Prague. (*Trans. Society of German Physicians*, April 27, 1877. *Chir. Med. Rundschau*, Aug., 1877.)

In a paper on the cicatricial ectropion of the cervix (as B. calls the laceration of the cervix of Emmet), and its operative treatment, published in 1876, B. called attention to the possibility of the everted cervical mucous membrane becoming, through constant irritation, the seat of cancerous degeneration, which would then show an unusual character and formation. This supposition was based on two cases, in which, notwithstanding the cancerous disease of the cervix, both lips still plainly showed their bilateral laceration and eversion. Recently B. has met with two further cases of the kind, in both of which the laceration extended to the vaginal insertion and only one lip was affected—in one case the anterior, in the other the posterior lip. Both cases were operated upon, the cancerous infiltration being excised by the knife as far as practicable, and the laceration united by silver wire sutures, and in both primary union took place. In one case there is a chance of the cure being permanent, in the other the disease had already spread too far before the operation.

B. thinks himself perfectly justified in considering the cervical laceration and eversion the primary cause of the carcinoma, and says that the more the complete excision of the cancer is attended with difficulty and danger, the more is Emmet's operation called for as soon as the laceration is recognized, as a prophylactic against possible subsequent malignant disease. P. F. M.

PEDIATRICS.

13. The so called Swallowing of the Tongue. (*Jahrbuch f. Kinderheilk.*, XI., 2 and 3.)

C. Hennig, of Leipzig, writes concerning this as follows:—"The oldest accounts speak of suffocation caused by retraction of the tongue into the throat, and pressure upon the epiglottis from its overturned dorsal surface *only after division of the frenum.* Such instances are mentioned in Fr. L. Meissner's *Encyclopedia of the Med. Sciences*, and in the *Mémoires de l'Academie des Sciences*, 1742, p. 247, in which latter J. L. Petit mentions one fatal case, and others following it, in which the children were saved by drawing the tongue well forward, and holding it by a thick compress placed upon it and kept in position by a bandage running under the chin. Désormeaux says that he has never seen such a case, but does not doubt Petit. Since that time no one but Krukenberg has supported him, while many have declared the accident impossible.

In 1876 I heard of two cases in Crefeld, in which death occurred from attacks of suffocation during whooping-cough and in which there was said to have been a swallowing of the tongue. None of my colleagues in the meeting at Hamburg had seen anything of the kind in connection with the whooping-cough, but Dr. Veh, of Moscow, said that division of the frenum was very freqnent in Russia, and he had often heard of swallowing of he tip of the tongue. There is also danger of this during and after operations for removal of the lower jaw, when the genioglossi, hyoglossi, and styloglossi muscles are separated from the bone. To prevent it, Dieffenbach recommends to pierce the point of the tongue and tie it by a silk ligature to pieces of adhesive plaster on the cheeks.

But beside these strictly surgical cases there are others of what we may call *looseness* of the tongue. (See *v. Ziemssen*, XII., *Anhang.*, p. 257, and *Henle u. Pfeiffer's Zeitschrift f. rationelle Medicin.*) Either after division of the frenum or in consequence of its imperfect development, there is sometimes a retraction and retroflexion of the tongue which may cause suffocation. In pertussis the tongue, during the paroxysms of cough, is thrown violently and rapidly against the lower jaw. This often causes, especially when only two teeth are developed in the lower jaw, abrasions on the sides of the frenum, and from these deep ulcers may arise. The convulsive pain caused by these, together with the strong reaction of the tongue during the inspiratory whoop, is added to the usual retraction of the tongue during inspiration. Its upper surface is hollowed, concave in both directions, and during the convulsive action the tip may be bent over, drawn backward and possibly wedged between the palate and the base of the tongue or the epiglottis. In each case we must examine as to whether pressure is made upon the epiglottis by the thick base of the tongue, or whether the stoppage is due to retroflexion of the tip of the tongue. Perhaps many cases of death during pertussis, which were formerly ascribed to spasm of the glottis, belong under this head.

The cases I heard of in Crefeld were described to me by Dr. Schneider as follows :—"The first case was in my own child, a strong boy, four months old, suffering from a mild attack of pertussis. He died suddenly of suffocation. Ten minutes after death I found the tongue retroflexed and its tip wedged in the throat. A few days later a neighbor's child, three months old, died in the same sudden way, and two hours after death I found the tongue still fast in the throat. This child had had several convulsions during the paroxysms of cough, and in the last attack died suddenly after one or two spasmodic attempts at inspiration. The frenum had not been divided in either of these cases.

Dr. R. Seydeler writes from Bromberg of a case in which he gave to a child eight days old, who had been nourished entirely by the breast, a few drops of tinct. rhei from a spoon. An attack of suffocation followed immediately, but examination showed the tongue to be in normal position and the usual measures soon restored the respiration. The doctor explains the occurrence by supposing that the child, on receiving fluid for the first time in an unusual way, did not know what use to make of its tongue, and at the first motion of swallowing was seized with fear of suffocation and unable to avoid it. The scene was not repeated.

Similar cases occurring in sleep, etc., are reported by Roger (*Journ. f. Kdkh.*, 41, 12, 1863) and Simon (ib., 51, 337, 1868)." J. F.

14. Fatty Liver in Children. (*Memorabilien*, XXI., 3.)

Friedrich Betz gives an exhaustive description of fatty hypertrophy of the liver in childhood, explaining our present knowledge of the subject. The incentive to the work was given by a case of idiopathic fatty hypertrophy of the liver, observed by the author in a girl sixteen months old. The child was in poor condition, in spite of careful nourishment and a good appetite. The stools were viscous, discolored, sometimes glistening, here and there bloody. The hypertrophy of the liver could be easily diagnosed by palpation. Eight weeks after an attack of measles the child died with symptoms of acute bronchitis and rapid phthisis.

At the autopsy there was found a much hypertrophied and fatty liver, weighing about one and one-quarter pounds, and with its cells increased to three or four times their normal size and filled with fluid fat globules.

Betz points out that the macroscopic appearances of the liver may easily give rise to errors in diagnosis, that anemic portions appear fatty, and on the other hand hyperemic fatty livers may appear brownish red. Since it is not accurately decided how much fat the liver cells normally contain, in difficult cases the diagnosis can be settled only by determining the actual percentage of fat in the liver.

The clinical signs of fatty hypertrophy of the liver in childhood are:

1. Increase of size in the liver, with a smooth surface and a thick edge. The resistance is the same as in a normal liver.

2. The area of dulness over the spleen is not only not increased, but in many cases is decreased (in differentiation from a cirrhotic liver).

3. Fatty liver is accompanied by about the same diseases as the cirrhotic liver. We omit the enumeration of them.

4. Hereditary disposition is said to have great diagnostic worth. Icterus and ascites do not occur with fatty liver.

Betz is of opinion that the fatty hypertrophy of the liver does not admit of a restitutio ad integrum, and that, just as there is an idiopathic fatty degeneration of the heart, so there may be an idiopathic fatty liver.

As to etiology he considers it not improbable that, under the influence of hereditary disposition, premature formation of fat in the liver occurs even in the fetus. He calls attention to the fact that premature fatty degeneration of the gravid uterus may have an influence in the production of fatty liver, and that in this way we may explain the concurrence of fetal fatty liver and premature deliveries. In extrauterine life he mentions as causes of fatty liver, improper forms of nourishment, especially over-feeding. He is, however, of opinion that many of these children have an individual predisposition to fatty liver and eat a great deal because they feel an increased need of hydrocarbons and fatty substances.

Betz agrees with Steiner and Neureutter, in regard to chronic intestinal catarrh, that it is not so much the cause as the result of fatty liver. The relation to consumptive diseases is also not clear, and it is very possible that here also the fatty liver is rather the cause than the result.

The absorption of fat from the liver into the circulation may give rise to important disturbances, to capillary emboli, to exudative processes, cheesy infiltrations, etc., and a fatty liver may be the cause of serious complication in any acute febrile disease because the elevated temperature renders the fat thinner and more absorbable.

The treatment of fatty liver demands:—(1.) Avoidance and removal of all causes which may lead to an increase of fat in the liver—that is, the strictest avoidance of fatty and starchy food, even the fat of milk, and especially cod-liver oil. (2.) The exhibition of remedies which lead to a diminution and excretion of the fat, such as alkalies and alkaline waters and mineral waters containing iodine, change of climate, and forest air well charged with ozone, are especially to be recommended. (3.) Avoidance of injurious influences exerted by the fatty liver on the healthy or diseased body, especially attention to the anemia combined with fatty degeneration of the heart so frequently accompanying fatty liver. This is to be avoided by the strictest withholding of purgatives, bleeding, etc., and non-use of the brine baths, to which Betz ascribes a depressing effect. Fatty liver demands rather a strengthening treatment. J. F.

15. NEW TREATMENT FOR UMBILICAL HERNIA IN CHILDREN.

ARCHAMBAULT describes in the *Paris Méd.*, of Oct., 1876, the following treatment for umbilical hernia in infants:

He makes a ball of wax of such size that one-half of it will just fill the umbilical depression. This half ball is pressed into the umbilicus and fastened with a strip of adhesive plaster. In two hours it adheres so firmly that no further bandage is necessary. Archambault has in this way cured navel hernias in two months. J. F.

16. CASE OF ACUTE FATTY DEGENERATION IN A NEW-BORN CHILD. (*Arch. f. Gynäcol.*, X., 3.)

C. v. HECKER reports a case of acute fatty degeneration in a newborn child.

It was in a child weighing 2,750 grms. (88 ounces), and measuring 51 ctm. (20 inches) in length, which died 14 hours after birth—a very slight hemorrhage having probably taken place from the loosely-tied cord.

The cadaver was intensely icteric. In the lungs, beside numerous subpleural ecchymoses, were large, fresh hemoptoic infarctions. Upon the pericardium were extravasations of blood, and the heart-substance was flabby and brittle. In the stomach and intestines were evidences of copious recent hemorrhage. The liver was of normal size, and showed on section an intense icteric color. The spleen was considerably enlarged. The liver-cells, heart-tissues and kidneys were thickly infiltrated with fat molecules.

The autopsy reminded strongly of the post-mortem appearances after poisoning from phosphorus, and agreed entirely with the descriptions given by Buhl of autopsies in cases of acute fatty degeneration in new-born children.

v. Hecker mentions another somewhat similar case.

A new-born girl, weighing 2,700 grms. (86 ounces), with a dirty, yellowish-gray skin, is covered over the whole body with petechiæ. Otherwise she is perfectly healthy. The labor was normal.

The child lived about four days. On the first day it drank well; after that began to fail, and took almost no nourishment. The cord fell off normally, and without hemorrhage.

The autopsy showed hemorrhages between the muscles, at the base of the brain, causing destruction of the cerebellum, in the vertebral canal, in the lungs, in the heart-substance, and in the stomach and intestines, and bladder. The liver was moderately icteric, the spleen large, weighing 50 grms. (℥ xiij.), or six times as much as the normal spleen in new-born children.

The blood coagulated slowly; the proportion of white to red corpuscles was about 1 : 6. Microscopic examination of the heart, liver, and kidneys showed fatty degeneration of moderate amount. The case was considered one of congenital leucemia. J. F.

17. THE TRANSMISSION OF SYPHILIS FROM THE FETUS TO THE MOTHER. (*Med. Times and Gaz.* 1380.)

Jos. HUTCHINSON claims that he, as early as 1856, reported a number of cases in which mothers had been infected with syphilis from their own children while the latter were still in utero. This syphilis of the mothers did not show itself in the form of regular secondary eruptions, but usually in less striking, irregularly occurring signs, such as sores on the tongue, psoriasis palm., gummata of the cellular tissue, etc. In general it is a much milder form than that which follows the acquisition of a chancre.

As a convincing proof that syphilis may be acquired in this way, Hutchinson brings forward the fact that mothers who have borne syphilitic children are not infected *from them* after birth, a fact which in England is known as "Colles' law," a law which Hutchinson, however, extends still further, saying that such mothers are *altogether protected* against syphilis, although the statement is somewhat modified by the fact that a considerable percentage of them have had chancre-syphilis.

It must be admitted that this method of infection through mediate contact of the blood masses is very peculiar; that syphilis so acquired differs from that following a chancre, somewhat as vaccinia differs from variola; that it frequently gives no peculiar symptoms of disease, but gives immunity by means of a specific change which has taken place in every cell in the affected organism.

It is also improbable that such syphilitic infection can ever cause severe secondary appearances—at least this happens extremely rarely. The symptoms are usually very slight—some indisposition during the pregnancy, loss of hair, soreness of the tongue, spots on the palms of the hands, or nodules in the cellular tissue. Rarely these are followed later by tertiary symptoms. It is also possible, though not proven, that tertiary symptoms appear after a long time in some women who have shown no secondary signs whatever.

Hutchinson seems not to be acquainted with the well-known and ancient experiment of inoculation by Caspary.

In conclusion, he wishes that physicians might from their own experience answer the following questions:

1. Has any one seen a chancre on the nipple of a mother nursing her own hereditarily syphilitic child?
2. Or, on the mother of hereditarily syphilitic children, a chancre, or a well-marked secondary eruption which made the existence of a fresh chancre probable?
3. Has a mother who has borne syphilitic children—yet never had chancre-syphilis—in a second marriage with a healthy man borne healthy children?
4. Has any one seen tertiary symptoms occur in late years in such women?

J. F.

18. SIX CASES IN WHICH FATHERS WITH SO-CALLED LATENT SYPHILIS BEGOT HEALTHY CHILDREN AND AFTERWARD SHOWED SYPHILITIC SYMPTOMS. (*Viertlj. f. Derm. u. Syph.* III., 4.)

DR. J. EDMUND GÜNTZ (Dresden) commences his report of six cases in which fathers suffering from so-called *latent* syphilis begot healthy children, and afterward, without new contagion, were attacked again with syphilitic symptoms, by making the statement that the term "latent" cannot be understood to mean any more than that at the time no visible symptom is present.

We think, however, that Güntz states in this only what is well known. At the time of the discovery of the so-called syphilis corpuscle of Lostorfer, the view was very generally expressed that, if the discovery should be confirmed, latent syphilis could be said to exist no more. It is also well known that fathers who have been syphilitic may beget syphilitic children, even though not a trace of syphilis can be discovered upon them. It is, however, well to show that the generation of *healthy* children cannot be looked upon as proof of the absolute cure of syphilis, and the following cases from Dr. Güntz are extremely interesting and instructive in their bearing on this point.

1. A man of forty-four years of age, father of a healthy, fourteen-year-old boy, acquired a hard chancre and general syphilis. All symptoms of this had disappeared after six months, and fifteen months later he was remarried to a healthy woman. Nine months later a child was born which has been under observation for twenty-one months, and has been perfectly healthy during this time. Six months after the child's birth the father was attacked with orchitis syphilitica.

2. A man thirty-two years of age had syphilis which showed some signs for six years. For two years following no symptom of it could be discovered. He then married a healthy girl who became pregnant after a year, while at this same time there appeared upon the father mucous patches and psoriasis palmaris. Premature delivery took place at seven and one-half months. The child has been under observation for four and three-quarter years and has never shown a sign of syphilis.

3. A man of thirty-four years of age who had once had syphilis, is said to have had a syphilitic child in the first year of his marriage, and in the third year a healthy child. Three years after the birth of his second child he suffered from orchitis syphilitica—as shown by an autopsy.

4. A man of fifty-four years was the father of a healthy eleven-year-old son and a healthy nine-year-old daughter. After the birth of these two children he acquired syphilis. He then begot a third child, which was under observation up to its fourth year and perfectly healthy up to that time, while after its birth symptoms of syphilis could still be found on its father.

5. A man married a healthy woman six years after he had apparently recovered from his syphilis. He begot four children who remained free from syphilis. After the birth of the fourth one he was attacked with deafness, which disappeared under anti-syphilitic treatment.

6. A man of thirty-two years was married after having been free from syphilis for seven years. In the first year of marriage he begot a healthy child. In the fourth year he suffered from syphilis ulcerosa of the soft palate. J. F.

19. PREMATURE DEVELOPMENT AND MENSTRUATION IN A CHILD TWENTY-TWO MONTHS OLD. (*Bouchut—Gaz. des hôpitaux.*)

Even in very young children we occasionally observe hemorrhages from the vagina, the origin of which is not known and which we usually consider as examples of premature menstruation. Such cases should be very carefully observed and divided into two categories—first, simple hemorrhages from the walls of the vagina, etc., and second, true cases of premature menstruation. Bouchut has several times seen spontaneous vaginal hemorrhages of from one to two days' duration in girls of from two to five days, and also three to four years of age. In one such case the hemorrhage occurred but once, in the others it returned once or twice and then ceased. There was nothing to point to menstruation, except perhaps the regularity of the return. Other signs of puberty were absent.

Dr. Cullingworth, of Manchester, has collected thirty-two such cases. Bouchut himself has mentioned several in his "Traité des maladies des enfants"—one in a three-year-old girl, published by Geoffroy Saint Hilaire, one by Dr. Wilson of Philadelphia, a third by Dr. Piazza of Piombino, a fourth by Turner of Tennessee, and now a fifth one which has not yet been published. The case was sent to Bouchut from Nouméa by naval surgeon Dr. Lostalot, and had been seen earlier by Dr. Kemp of London, and Drs. Ryan and Varren of Dublin.

Nelly O. was born in London on January 27, 1872, and was the fourth daughter in a family of six children. She is only four years and two months old, and is very strong and well developed for her age. What strikes one at the first glance is the completeness of her contour, the development of her shoulders and hips, and the muscular rounding of her limbs. She weighs fifty-five pounds and enjoys perfect health.

Her parents state that when she was born they were frightened at the development of her breasts, which were as large as small apples. No other peculiar signs were observed, however, until she was twenty-two months old, when for the first time her courses appeared. Since then they have occurred regularly every four weeks. They last about four to six days and the quantity is about equal to the usual flow of a grown girl.

When Bouchut first saw this child, in April, 1876, the breasts were large and completely developed, and offered a striking contrast to the slight development of the thorax. They were as large as a stout man's fist, somewhat pear-shaped, with a slightly elevated, rosy areola, forming a rounded summit, in the centre of which was the nipple. They increased notably in size at the beginning of menstruation and remained enlarged during the whole period. The vulva was covered with thick hair, and the external organs of generation showed the same development as the breasts. The character of the girl is much more earnest than is suitable to her age. She does not seek the society of boys more than that of girls, and seldom joins the other children in their play. She loves to play the rôle of a mother.

"This interesting case," says Bouchut, "is one of the most complete which exists in all literature. It destroys all doubt as to the possibility of menstruation in small children. The only question to which it gives rise is concerning the connection between ovulation and uterine hemorrhage, supposed to be demonstrated in menstruation. One may question, whether in this child an ovum ripens every month? Since the observations of Bischoff, Meckel, Boismont, Pouchet, Raciborski, etc., we have considered menstruation as simply the result of the ripening of an ovum and its discharge, accompanied by uterine congestion and hemorrhage. Is this true? We may doubt it.

1st. Because in many cases where women died a few days after menstruating, Coste and Bischoff themselves could find no trace of a ruptured Graafian vesicle.

2d. Because ovulation and conception may take place without menstruation.

3d. Because in twenty-seven cases of bilateral ovariotomy, Goodman cites ten cases in which the menstrual function continued uninterruptedly."

Bouchut states therefore as his opinion that in this case there is rather a *periodical congestion of the uterus* than a *monthly ovulation.*

(This case possesses peculiar interest in connection with Dr. Williams' (University College Hospital) lectures on menstruation and amenorrhea in the *Lancet* for August. Dr. Williams claims that "menstruation is not the result of congestion of the uterus," nor is it the "result of erection." He claims still further that it is *not in any way dependent on ovulation.* This case of Bouchut's would seem to curiously corroborate this latter view, provided it could be shown that, as Bouchut supposes, no ovum escapes at the regularly occurring menstrual periods. The case from which Dr. W. draws his strongest argument is one reported by Dr. Atlee, of bilateral ovariotomy followed for several years by regular menstruation.—REP.) J. F.

20. THE VARIOLIFORM DISEASES, THE ORIGIN OF COW-POX AND INTRA-UTERINE VACCINATION.

In *No.* 116 *of Volkmann's Sammlung klinischer Vorträge,* (*Aug.*

29, 1877,) Dr. O. Bollinger, of Munich, summarizes the chief facts which are known in regard to the varioliform diseases of the domestic animals, and maintains that they should all be looked upon as forms of small-pox or sheep-pox. An affection resembling sheep-pox may be caused in sheep by variolation or vaccination, but its identity with sheep-pox, assumed by many, the author considers to be unproved. He calls attention to the fact that the disease produced by vaccinating sheep is communicable by effluvium, although the original virus of vaccinia is of a fixed nature. He considers the question of whether swine-pox is capable of engendering varioloid in the human subject as not admitting of a solution at present. The circumstance that cow-pox is of frequent occurrence in Germany, where horse-pox (the lesions of which he speaks of only as occurring upon the heels) is almost unknown, seems to him to disprove the theory (originally brought forward by Jenner, and recently maintained by Depaul), that cow-pox originated from horse-pox.

He gives the following description of cow-pox: As a rule, the exanthem is localized upon the teats, more rarely it is found on the udder also, and exceptionally it is confined to the latter alone. It occurs in the female almost exclusively, and only on the udder and during lactation. After an incubation of three, four, or six days, followed by redness, swelling, papulation, and vesiculation, occupying five or six, or more rarely eight to ten days, we find the characteristic pustules fully developed. They are generally few in number, seldom as many as twenty or thirty existing at one time. Their size is generally from that of a lentil to that of a pea, with larger ones now and then—up to two centimetres in diameter. They are for the most part roundish in form, and appear somewhat depressed and umbilicated at the centre. Frequently, however, the umbilication is altogether wanting or but feebly developed, or there is merely a dusky spot at the centre; in other cases the pustule is slightly raised, conical or accuminated. Frequently the lesions themselves are not at all characteristic, but quite flat and without any depression; the whole process is so insignificant as to be readily overlooked. In the virulent stage the contained fluid is clear and colorless, and subsequently purulent. The color of the pustules depends partly upon the stage of the efflorescence and partly upon the tint of the udder. The smaller pustules are for the most part whitish-yellow, the larger ones rather bluish. The red areola may be wanting now and then, or is but rudimentary, but there is circumscribed inflammatory induration and manifest prominence of the derma situated beneath the pustule, and often of the subjacent areolar tissue. On the eleventh or twelfth day the pustule begins to dry up, and a tolerably thick, dark, brown crust is formed which is smaller than the pustule, and has a translucent, horny border. After this is shed, during the third week, we see an oval or roundish scar, of not very characteristic appearance, which lasts for years.

The pocks appear in successive crops, the later ones being as infective as the earlier ones, whereas in inoculated cow-pox they all develop and mature simultaneously, and are almost all alike in size and formation. Complications, due to traumatism, frequently interrupt the progress of the pustules, which, being destroyed, give place to suppurating sores, hemorrhages, protracted incrustation, and deep ulcerations. The constitutional phenomena are not constant, amounting to nothing in many cases, whilst in others the disease begins with slight disturbances, such as drivelling of saliva, rumination with the mouth empty, deficient appetite, diminished secretion of milk, and slight fever. The udder then becomes tender, and on the following day we find the papular eruption on the teats, with a slight swelling of the udder. High fever is observed now and then, with expressions of severe pain on handling the udder. The milk is usually lessened in quantity, as well as thinned, owing partly to the difficulty of removing it all by milking on account of the tenderness of the udder.

Those who, like Jenner and Sacco, formerly assumed the constitutional phenomena to be pathognomonic of true as distinguished from false cow-pox, were in error. The contagium being a fixed one, the disease spreads slowly through a herd. The diagnosis is often difficult. In certain infective diseases pock-like eruptions are found on the udder. In the foot-and-mouth disease pocky papules and tubercles are seen on the lower portions of the teats, gradually changing into vesicles and larger confluent blebs. Their contents are fluid, and generally of an intense straw-yellow. In nasal diphtheria an herpetiform eruption occurs upon the udder, which, however, can scarcely give rise to error. The malignant, generalized varioliform disease described as having prevailed in Lombardy, Holland, and England, in the last century, and in India in the fourth decade of the present century, was doubtless Rinderpest. Casual inoculation of the human subject will often settle the diagnosis.

The author does not believe that cow-pox is of autochthonous origin, or that it originates from horse-pox, but that it is contracted from the variola or the vaccinia of the human subject—most frequently the latter. In conformity with this statement, he maintains that the effects of continued inoculations with variola-vaccine (which he prefers to call vaccinized variola), are precisely the same as those with original cow-lymph. The bovine organism is capable of converting the poison of variola into the benign vaccine virus, whilst on the contrary the organism of the sheep may, under certain circumstances, change vaccinia into a generalized and malignant disease. Retro-vaccine is identical in its effects with original cow-lymph. There is no such thing as original cow-pox. The Beaugency case (the discovery of which the author erroneously credits to Lanoix) originated from human vaccinia.

Vaccination may be made to succeed, as shown by Reiter, with lymph diluted with 1,600 times its bulk of water, if charpie, saturated with it, be applied to a vesicated surface, whilst the result is very uncertain if the method by scarification be used, and perfect failure takes place if the operation be by puncture. The blood of a person with vaccinia is inoculable by the vesication method, the proportion of virus in the blood being about 1 : 1200. This inoculability of the blood accounts for intra-uterine small-pox and for insusceptibility to vaccination on the part of children whose mothers had small-pox or vaccinia during the gestation resulting in their birth. Such children, when they do not bear marks of small-pox, must be considered to have had intra-uterine variola sine exanthemate. If vaccination of the mother during pregnancy be unsuccessful, the child is not infected. Vaccination of the pregnant woman, preferably in the eighth month, he recommends for the purpose of protecting the child against small-pox from the very moment of its birth.

[The reporter regards some of Dr. Bollinger's views as untenable.]

F. P. F.

REVIEWS AND NOTICES OF BOOKS.

THE QUESTION OF REST FOR WOMEN DURING MENSTRUATION. By MARY PUTNAM-JACOBI, M.D. The Boylston Prize Essay of Harvard University for 1876. Illustrated. New York: Putnam's Sons, 1877, pp. 232.

"Do women require mental and bodily rest during menstruation?" is the exact question proposed by the Boylston Medical Committee. The matter is one of such supreme interest and importance, and its solution in some respects so essential to the welfare and development of not only the female sex, but of the whole human race, that any attempt to unravel a portion of the mysteries of reproduction should meet with decided approval.

So far as the period of puberty and early womanhood are concerned, this question has been answered affirmatively (and, we believe, to a great extent properly so) by Dr. E. H. Clarke in his work, "The Building of a Brain," and "Sex in Education," three or four years ago. The problem now propounded relates to the remainder of the reproductive life of woman.

The author has undertaken, and, so far as circumstances permitted, completed her laborious task with customary energy and ability. She divides her subject into six sections: 1. Introductory, historical, general considerations in regard to (female) labor; 2. Statistics; 3. Theory of Menstruation; 4. Experimental; 5. Theory of Supplemental Nutrition; 6. Application, and finally, conclusions.

After discussing the limits imposed by sex on inducting the morbid effects of menstruation, and various historical theories of menstruation, the author resolves the subject of the essay into the following series of questions:

1. What proportion of women habitually suffer pain or discomfort of any kind during any part of the menstrual period?

2. How many out of this proportion are compelled to suspend their ordinary avocations on account of this pain?

3. Is there any uniform relation between the nature of the occupation and the necessity for its interruption, *i. e.*, do some occupations more frequently necessitate intermissions than others?

4. Among women, who, on account of immunity from menstrual pain, have never been in the habit of resting at the menstrual period, are there any considerable number whose health has progressively deteriorated without the presence of any other condition that could be assigned as the cause of such deterioration?

5. What is the real succession of phenomena in the menstrual process, and what relation does it bear to the other processes of the economy?

6. This relation established, what inference in regard to women's capacity for work should be theoretically deducted from it?

7. If discrepancies exist between the practical statistic and theoretical inference, how are they to be explained?

8. Finally, do either fact or theory point to any hygienic rules exclusively applicable to the work of women?

In order to answer the first four questions, the writer, by means of printed circulars sent out to 1,000 intelligent women throughout the land collected, data from 268 of these women, from which she compiled a series of 24 statistical tables bearing on the family history, general health, menstrual history, ratio of active and sedentary life, apparent influence of mental and bodily exercise on the reproductive functions, etc. Judging from these tables alone, one would say that the immunity from menstrual suffering was to be expected in proportion to: 1. The vigor of health during childhood, and to the soundness of family history, especially with regard to freedom from hereditary disease; 2. To the degree of exercise taken during school-life; 3. To the thoroughness and extension of the mental education; 4. To the degree to which general health and capacity for exercise was maintained after cessation from study; 5. To steadiness of occupation; 6. To marriage at a suitable time. As regards rest, in the majority of cases it appears to have been entirely superfluous during the menstrual period.

With a further view of solving the above four and the fifth questions, a large number of exceedingly laborious investigations were made by the author herself and by several medical lady friends of hers, on the increase and diminution of nutritive force and material, before, during, and after the menstrual epoch, and a series of elaborate tables on the temperature, pulse, and amount of urine and urea excreted during the above periods are given, together with fifty-five sphygmographic tracings from eight individuals. These investigations show that the amount of urea during the few days preceding the menstrual flow is increased above the average at inter-menstrual periods, and diminishes markedly after the cessation of the flow; and that there is in women a rhythmic wave of plenitude and tension of the arterial system, beginning from one to four days after the cessation of menstruation, and gradually rising to a maximum at any time from the eighth day before till the first day of menstruation. The questions: 1. Why, in some cases, menstruation is painful from the beginning, and in others not until long after; 2. Why some otherwise healthy women suffer pain, and other delicate ones do not? 3. Why, indeed, the menstrual function should be painful at all (as it was in 46 per cent. of the cases collected by the author) any more than epistaxis or any natural evacuation? 4. Whether such painful disturbance is likely to lead to anything serious? And finally, 5. Whether there is anything in the nature of menstruation that should lead us to expect a necessity for mental and physical rest, even when no pain is experienced? These five questions led the author to examine into and discuss the theory of menstruation, to the independence of which function from ovulation we find her signifying her adherence, in accordance with the modern view. These five questions are also those which, after a thorough study and exhaustive discussion of the material collected by her, the author answers in her final conclusions as follows:

1. Pain existing from the first menstruation depends upon (*a*) imperfect power of resistance in the nerve-centres, and the increased vascular tension during menstruation; (*b*) disproportion between the development of the uterus and that of the rest of the body, resulting in various organic defects of the genital canal; (*c*) When acquired menstrual pain depends upon the acquisition of conditions of imperfect nutrition during childhood, the aggravation of local organic imperfections, or utero-ovarian disease, the two latter of which may result from ill-arranged work, celibacy, or the accidents of parturition.

2. When persons in good health suffer *severe* menstrual pain, this is nearly always dependent upon some anatomical imperfection of the uterus. The reason why some persons in delicate health are free from menstrual distress is, because the supplemental wave of nutrition does not rise sufficiently to greatly increase general vascular tension, or because the uterus is too slightly hyperæmiated to excite reaction.

3. The reason why 46 per cent. of the women examined by the author suffer during menstruation must be sought to a great extent in the habits of civilized life, and the slender provision made for the physical education of girls.

There are no anatomical or physiological conditions revealed in the course of the present analysis which render the menstrual process necessarily productive of suffering. On the contrary, these rhythmically increased waves of nutrition are provisions of nature for rhythmically increasing the nutrition and vital energy of women.

4. As a rule, purely spasmodic menstrual pain does not require interference or rest; pain depending on organic defect, however, claims rest, when possible; and in cases where the general debility is so marked that the menstrual loss of blood lowers the nutrition of the nerve-centres below the level of ready recuperation, activity brings on pain, and rest becomes imperative and even curative.

5. "There is nothing in the nature of menstruation to imply the necessity or even the desirability of rest for women whose nutrition is really normal." Indeed, periodical rest for such women might be-

come injurious by favoring a sluggish circulation, and consequently pelvic congestion.

In arriving at this last conclusion, our author refers mainly to physical rest. As regards mental rest during menstruation, she thinks the question is sufficiently answered by the multitude of women regularly and *uninterruptedly* engaged in mental pursuits (the professions, teaching, medicine, etc.). She denies that a woman during her menstrual period is less capable of attending to duties requiring independent judgment, thought and will than at other times, and admits of but one group of cases where *mental* rest might seem imperative for women during menstruation. This is, when the nutrition, and hence the vital resistance of the nerve-centres, has been diminished, and increased vascular tension irritates nerve-elements, and may produce any degree of nervous erethism from ill-temper to insanity. Ordinarily in the healthy woman the increased vascular tension, which has been shown to occur just before the menstrual flow, takes place so gradually, falling during the flow itself, that the healthy brain becomes habituated to it, and experiences no irritation or shock. Therefore, when a woman shows mental irritability and weakness at or before menstruation, it is a sign that her nerve-centres are in a functionally more or less impaired condition, and that all attempts to force mental action during that period should be avoided. In aggravated cases of this kind, rest, however, alone is insufficient, and other measures must be employed to effect a cure. Wherever mental rest is *necessary*, says the author, it will be taken *eo ipso*, that is, no really *mental* work will or can be performed when the brain is unequal to the task.

In order, therefore, to avoid injury during the years of adolescence and early reproductive life, the work of women should be properly proportioned : 1st, To the conscious ease with which it can be performed ; 2d, To the duration of the separate sessions of study ; 3d, To the known standard of nutrition of the nerve-centres in the individual case, especially as measured by predisposition to hysteria, chorea, insanity, or consumption ; 4th, To the coincident maintenance of proper hygienic conditions, especially in regard to food, air, and exercise; the regulations in regard to the menstrual period should be entirely individual.

Any modifications demanded in female labor should be graded in accordance with the whole nutritive provision of reproduction, of which the menstrual flow is only one indication. "It is to the development of a supplemental wave of nutrition and the manner in which it intersects the waves of individual nutrition that are due most of the peculiarities of the female organism and its activity, and not to the mere existence of reproductive organs."

The author concludes with the statement that theoretical reasoning and practical observations prove that women work better and with greater safety to health when their work is frequently interrupted, these intermissions being at short intervals, and short in duration, not at long intervals, and lasting longer, but that they are required at all times, and have no special reference to the menstrual flow. Still, she says, it remains true that in our existing social conditions 46 per cent. of women suffer more or less at menstruation, and for a large proportion of these humanity dictates rest from work during the period of pain, wherever practicable.

We have thus given an analytical rather than a critical review, because the essay consists almost entirely of original researches and investigations, the truth of which is unquestionable, and which, therefore, are not open to criticism. The same may, to a great extent, be said of the conclusions drawn from those researches. But when the author states that in women *whose nutrition is really normal* there is nothing in the nature of menstruation to render rest during that period necessary or desirable, and when she admits that 46 per cent. of all women at present suffer from menstrual pain, and therefore require rest, when practicable, at that time, she virtually admits, also, whatever may be her theoretical reasoning, and, very naturally, her private inclinations, that in the present over-civilized and delicate condition of the human race, in only a very small portion of whom nutrition may be considered to be "really normal," mental and bodily rest during menstruation are necessary and useful to a large majority of the female sex, and she thus furnishes the answer probably expected by the committee in their effort to define the proper industrial sphere and limit of action of the weaker sex.

The equipment of the book is excellent, and there is but one fault to find with its technical execution, and that is the rather frequent mis-spelling of foreign proper names, due doubtless to hasty proof-reading. P. F. M.

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ORIGINAL COMMUNICATIONS.

LAPARO-ELYTROTOMY: A SUBSTITUTE FOR THE CÆSAREAN SECTION.[1]

BY

T. GAILLARD THOMAS, M.D.

The operation of laparo-hysterotomy or the Cæsarean section, dating back as it does as an operation performed in the double interest of mother and of child, to the fifteenth century, has now for nearly four hundred years stood at the disposal of the obstetrician who found himself unable to deliver through the natural passages. One writer, Dr. Mansfield, has even striven to prove from the records contained in those most curious Hebrew works, the Nidda and the Talmud, that in this way it was performed by the Israelites of old, but the evidence which he has adduced has not been admitted.

Certain it is that, in the times of the early Greek and Roman civilizations, it was performed upon the dead woman in the interest of the child, but the first authentic case in which it was undertaken upon the living woman, and in her interest as well as in that of her offspring, dates back only to the year 1491.

Its history, since that period, is too well known to require more than a passing mention. In the year 1581 appeared the work of Rousset upon the subject, and then followed a period during which it became unreasonably popular, and was resorted to under circumstances which in our time would not be thought sufficient to render it warrantable or legitimate. Of course, the unrestrained performance of such an operation as the Cæsarean section produced many fatal results, not only in the hands of surgeons of ordinary capacity, but necessarily in those even of the most distinguished and deserved reputation. Cazeaux tells us that both Paré and Guillemeau were among the number of those reporting fatal cases. Then was it that Marchant, availing himself of these facts, wrote in denunciation of the too frequent resort to it, and his position being a strong one, he wrote very effectively. A strong party opposed, not to the Cæsarean section, but to the abuse of it, now arose and made its influence felt during the latter part of the sixteenth century. During the whole of the seventeenth and a portion of the eighteenth centuries, professional opinion was greatly divided as to its merits and sphere, and it may be said that even in our day unanimity has not been arrived at.

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[1] Read before the New York Academy of Medicine, March 21st, 1878.

In general terms, however, it may be stated that, towards the close of the eighteenth century, as the light of science began to dawn upon the art of midwifery, the Cæsarean section gradually assumed its legitimate position as an operation of priceless value in all cases in which delivery by the natural passages proves impossible; but one, the inherent dangers of which are so great that it should be resorted to upon the living woman only when her interests as well as those of the child are to be subserved by it.

To every obstetrician at all worthy of the position which imposes upon him such grave trusts as those of the lying-in-room, the life of the child is a consideration of great moment. That it is second in importance to that of the mother, and that under appropriate circumstances it should be promptly sacrificed to save hers, I feel sure that all here will admit. But clear as the light of day should be the indications, valid beyond all question the conclusion that no safer course is known to science, before one human being should take upon himself the terrible responsibility of destroying the life of another.

It is this consideration which gives to laparo-hysterotomy its chief importance. The alternative operation consists in the dismemberment of the child, which is either living at the time of the revolting procedure, or which has been allowed to die from delay in interference. Were the life of the mother secured by the sacrifice of her child, the objections to embryotomy would be less great than they are; but this is not the case. The dangers to the mother from this sacrificial procedure are still very great. To prove this, I will not refer to the statistics of general practice, which are rendered worthless by the suppression of numerous fatal cases and the publication of most of the successful ones, but cite only those which were collected in a well-regulated maternity hospital, and of operations performed by a master in the art of obstetrics. Dr. Maunsell[1] says: Dr. Joseph Clark found it necessary, in the Dublin Lying-in Hospital, to use the perforator in 1 in 208 cases. This gave a total of 49 craniotomies. Out of this number 16 women died, or 1 in 3; a dreadful mortality certainly when it is borne in mind that 49 children were sacrificed to effect even this saving of maternal life.

And what of the statistics of laparo-hysterotomy? They are worthless. All successful cases are reported. Hundreds of unsuccessful ones are suppressed. In the majority of cases probably, the child and woman have both been allowed to become utterly exhausted before the operation was decided upon, and then that mortality which has been created by delay and inaction on the part of the surgeon is charged unjustly to the operation. The statistics of the future may be, and as far as relates to hospital practice will be of great value: those of the past are worse than useless, in that they mislead, and becloud the truth.

In Great Britain, an honest prejudice has always existed against this operation. On the Continent of Europe, far better results have been obtained, but even there the statistics are by no means satisfactory. Writing in the present decade, Barnes, a good representative of modern midwifery, declares that, "the Cæsarean section occupies a doubtful place between conservative and sacrificial midwifery. It is conservative in its design, in its ambition; it is too often sacrificial in fact.

The position may be safely assumed that, although the exact risk to life attending the Cæsarean section cannot be settled, it must be regarded as an operation of the greatest gravity. And however much we may improve in abdominal surgery and in our ability to avoid its greatest dangers—hemorrhage, shock, peritonitis, and septicæmia—this operation will still, from its very nature, retain its place as one of the most dangerous procedures known to surgery.

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[1] Dublin Practice of Midwifery, p. 138.

A recognition of these facts has rendered obstetric surgeons anxious so to modify the procedure as to divest it of some, at least, of its dangers. Thus we learn that a variety of abdominal incisions have been at various times resorted to, and two substitutes, which I am about to mention, have been suggested.

In 1768, Sigault formally proposed the operation of section of the pubic symphysis, for the purpose of giving increased space to the cavity of the true pelvis. At the time when this procedure was proposed, Sigault was merely a student of medicine, and the Academy of Surgery to which his memoir was presented almost refused to entertain it. Some of the most eminent members of that body expressed the view that it was the undigested idea of a young and inexperienced mind. But Sigault, nothing daunted, sustained his proposition in an inaugural thesis presented at Angers in 1773, and in 1777, nine years after its first proposal, absolutely resorted to the operation upon a living woman. His patient recovered after having been delivered of a living child.

And then the tide of opinion turned strongly in favor of the persevering innovator. His name was lauded as that of one who had accomplished a great result for humanity, and the faculty of medicine of Paris had a medal struck off in his honor. In a short time, however, a strong opposition sprang up against the procedure, and at our day, although a short historical sketch of symphyseotomy is usually given in works on midwifery, no one ever resorts to it, or even alludes to it, except as an example of how wise men in medicine may be deluded by an unproved theory, and be misled into the endorsement of an untested experiment.

Thirty-eight years after this, that is in 1806, another idea was conceived in the same direction, and this time by a German. Kilian[1] tells us that at that time Jörg suggested cutting through the abdominal walls by an incision extending from the spine of the pubis to the anterior spinous process of the ilium; then cutting through the vagina, and delivering through the os uteri. He appears never to have performed the operation. In 1820, Ritgen proposed the same operation, and styled it gastro-elytrotomy, adding to Jörg's procedure the important amendment of lifting instead of cutting through the peritoneum.

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[1] Op. Geburtshülfe, Vol. II., p. 715.

In 1822, Physick[1] of Philadelphia proposed the same procedure to his friend Dr. Horner, and in 1823, A. Baudelocque, Jr., of France, published a thesis upon and once essayed the operation, but abandoned it, and resorted to the Cæsarean section.

In 1844, L. A. Baudelocque published a pamphlet of twenty-six pages upon it, entitled "Opération Césarienne, Elytrotomie ou section du vagin, précédé, ou non, de la ligature, ou de la compression de l'artère iliaque interne."

Kilian,[2] in speaking of Jörg's conception of the operation, says that he merely suggested it, and he alludes to one operation by Ritgen which ended fatally. Velpeau,[3] in 1835, alluding to Ritgen's procedure, says, "However, it exists only in theory, and no one has thus far practised it on the living woman." In speaking of Baudelocque's method, Velpeau says, after alluding to the case in which Baudelocque attempted elytrotomy and abandoned it for the Cæsarean section, "A single case, I admit, does not authorize us to draw positive conclusions, but this, the only one demonstrated upon the living woman, gives great force to the theoretical objections already mentioned against the idea of the author." Dr. Horner, who reports Physick's proposal to Dewees, says, in concluding his letter, "I have thought that even a proposition not yet confirmed by actual experience of its success, would not be an unacceptable addition," etc.

So far as I have been able to learn, then, this operation had been performed but once before 1870, when I repeated it. Ritgen was the operator; Baudelocque, according to Velpeau, merely essayed it, and probably losing confidence in an untried procedure—for I cannot, with my experience, see how failure in the removal of the child was possible—he at once resorted to the better known and more legitimate operation of the Cæsarean section.

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[1] Dewees' Midwifery, p. 507.

[2] Loc. cit.

[3] Traité de l'art des accouchements, Vol. II.

It is quite possible that I may be mistaken in the belief that but one attempt had been made before mine, for I have been foiled in my efforts to obtain L. A. Baudelocque's pamphlet, written in 1844, and a busy life has prevented my giving as much time as I could wish to a search into the literature of the subject.

In spite of all the suggestions and feeble attempts at putting in practice this operative procedure as a substitute for the Cæsarean section, it appears to have attracted little attention and to have passed out of notice with but little consideration. The complete oblivion into which it fell will be appreciated when I assert that, until some time after I had essayed it on the cadaver, I was fully under the impression that the idea had originated with myself, and although I spoke of it freely with my professional friends in New York, none of them were able to correct my error until I mentioned it to Dr. Emil Noeggerath, who remembered having somewhere read of Ritgen's operation. This hint led to the search into the literature of the subject, and resulted in the discovery of what I have just stated as to previous trials of the plan.

In most modern obstetrical works it has become a fashion to give a short sketch of Sigault's utterly worthless operation of severance of the pubic junction. In almost none is this procedure alluded to at all. Velpeau, Dewees, Cazeaux, and Bedford express opinions casting doubt upon the possibility of the successful performance of the operation.

Thus stood matters with regard to the subject when I began to investigate it. I had, in company with my friend, Dr. Henry F. Walker, on several occasions experimented upon the non-pregnant cadaver, when in February, 1870, an opportunity was presented me, through the kindness of Dr. Cushman, of New York, of testing the plan upon the body of a woman who had died of puerperal convulsions near the end of the ninth month of pregnancy. This experimental operation resulted as follows:

CASE I.—*Laparo-elytrotomy performed on the cadaver.*

A young Irishwoman, a multipara, aged about 30 years, had, in the latter part of the ninth month of pregnancy, as nearly as could be ascertained, died of uremic convulsions. Dr. Cushman at once notified me, and about eight hours after death I proceeded to remove the child by laparo-elytrotomy, in presence of Drs. H. B. Sands, J. L. Brown, J. B. Reynolds, Cushman, and Morton.

The body being laid upon a table, I passed my hand up the vagina, and in about fifteen minutes dilated the cervix uteri so that my hand could pass in. The membranes were unbroken. Withdrawing the hand from the vagina, I then made an incision with a bistoury through the abdominal walls on the right side, extending from the spine of the pubis to the anterior superior spinous process of the ilium, and sweeping upwards directly above the ligament of Poupart. Having cut through the muscles, I rapidly and easily lifted up the peritoneum with my fingers, and soon came in contact with the vagina at its junction with the cervix. Dr. Brown then passed a large steel sound into the vagina, so as to make it rest against the cervix, and by this lifted the vagina into the opening in the abdominal walls. I then cut down upon the sound, enlarged the opening made with my fingers, and the sound was withdrawn. Fixing an obstetric blunt hook in the cervix, it was seized by an assistant, who lifted that part into the iliac fossa, while another depressed the fundus uteri in an opposite direction. Then passing my right hand into the open cervix, I easily caught a foot, turned the child and delivered.

The operation was performed rapidly and without difficulty or detention. It was the remark of all present that, had the child been alive at the commencement of the operation, no influence was developed during its performance which could have injured it.

CASE II.—*Laparo-elytrotomy performed on a living woman.—A living child delivered.*

Within a month from the time of the experimental operation just recorded, I was called in great haste by Dr. T. C. Finnell to a case which he was attending with Dr. Richardson, under the following circumstances. The patient, a multipara, aged about 40 years, and at the end of the 7th month of utero-gestation, had been suffering from pneumonia for a week or ten days, and was now *in articulo mortis.* Dr. Finnell intimated that he could wait only a short time for me, for, as the woman was fast becoming comatose, he should deem it his duty to perform the Cæsarean section in the interest of the child, which might prove viable. I hastened to the patient's house, and found everything in accordance with what has been stated; the patient, almost entirely pulseless, was cyanosed, breathing with a loud laryngeal rattle, and almost entirely unconscious. A rapid consultation was held between Drs. Finnell, Richardson, Jas. L. Brown, Walker, Lynch, and myself, and it was decided that the child should be removed at once by abdominal section.

The patient being placed upon a table, anæsthesia was produced, to the point of quieting her restlessness and jactitation, with a few inhalations of ether. I then passed my hand up the vagina and dilated the cervix slowly and cautiously, so that at a three-quarter distention no injury was done to its tissue. With a bistoury I then cut through the abdominal muscles, the incision being carried from the spine of the pubis to the anterior superior spinous process of the ilium. The lips of the wound were then separated, and by two fingers the peritoneum was lifted with great readiness, so that the vagino-uterine junction was reached. The vagina was then lifted by a steel sound passed within it, and cut, and the opening thus made was enlarged by the fingers. The cervix was then lifted into the right iliac fossa by the blunt hook, while the fundus was depressed in an opposite direction. I then passed my right hand into the iliac fossa and introduced two fingers into the uterus, while the left hand, placed on the outer surface of the uterus, depressed the pelvic extremity of the fœtal ovoid. The knee was readily seized, and delivery easily and rapidly accomplished. The child was born alive, but was a badly developed, harelipped, and, as I before stated, premature infant. It lived for an hour or two, during which time the rite of baptism was administered to it. The mother, the wound in whose abdomen was closed by interrupted suture, died about the same time as the child.

In completing the recital of this case, I need hardly point out the fact that the fatal issue for mother and child which occurred should not in the slightest degree be imputed to any inherent imperfection in the operation itself. It was unquestionably due to these two circumstances which characterized this individual case: first, that the woman was moribund when the operation was undertaken; and second, that the child was premature, undeveloped, and probably depreciated in strength by the toxæmia which had for days affected the mother in consequence of pneumonia. I think that I am correct in saying that all the gentlemen present agreed in the belief that nothing connected with its delivery could in any way have injured the child's prospects for life. The liquor amnii was unevacuated up to the moment when version was practised, and not an instant's delay, or the expenditure of any, even the slightest, force was developed as a possible cause of death. The child died, as we often see premature children die, from want of cerebro-spinal and ganglionic nerve-power to maintain the functions of life in its new relations, and to all intents, in so far as the utility of the procedure for the saving of fœtal life is concerned, it proves the affirmative as thoroughly as if it had lived for years.

This case was published, and I waited in the hope that another of more suitable character for testing the full resources of the operation might occur. Although a number of my professional friends were on the outlook for such a one, it did not appear until after three were met with by my friend Dr. A. J. C. Skene of Brooklyn. These, with Dr. Skene's permission, I introduce here, numbering them in regular sequence with my own.

Case III.—*Laparo-elytrotomy performed in the interest of the mother after perforation of child's head.*

The history of this case I condense from Dr. Skene's report.

The patient was a primipara at full time. Labor commenced on Friday, March 20th, 1874, and Dr. Charles Corey was called in on Saturday morning. The os uteri was dilated, but the head, the presenting part, was wholly above the superior strait. When the os became fully dilated, Dr. C. ruptured the membranes, but the head did not engage at all in the pelvic cavity. At 3 A.M. on Sunday, Drs. Andrews and Fürgang having previously been called in consultation, version was attempted, but found impossible, owing to the shortness of the antero-posterior diameter of the pelvis, which was not more than 2½ inches in diameter. At 8 A.M. of the same day, delivery by craniotomy was undertaken, but, after perforating the head, that also was abandoned, because of the œdema of the parts and the narrowness of the pelvis. Dr. Skene saw the patient at 2 P.M. on Sunday, about forty-eight hours after the commencement of labor. At this time, she was suffering from exhaustion. Her pulse was feeble, and over 130. Laparo-elytrotomy was proposed and agreed to by all present, as the only means of giving the patient a chance for her life. It was also felt that, if she died—which, in all probability she would do—she would be relieved, during her last hours, from the severe labor pains. She was anæsthetized, the abdomen and vagina opened, and Dr. Skene, seizing the occipital bone with the craniotomy forceps, delivered the child and placenta with ease, in ten minutes. The patient came out from the anæsthetic well, and remained free from pain. The exhaustion was but slightly increased by the operation, but it gradually became more marked, and she died seven hours after the operation.

The next two cases I give in Dr. Skene's own words.

Case IV.—*Laparo-elytrotomy successfully performed for mother and child.*

"Mrs. F., aged 31 years, born in England. She is rachitic, and, in giving her history, stated that she was unable to walk without support until eleven years of age. At twenty-five years of age her physician delivered her by performing craniotomy, after which she made a slow recovery, and was confined to her bed for six weeks. Some time after that she was delivered at the seventh month. The child lived only a few minutes. When she came to this country, her physician gave her a letter stating the nature of her former confinements, and also that she had a deformed pelvis. This letter she brought to me in 1872, when I found that she was again pregnant. She expressed a strong desire to have a living child, and, upon examining the pelvis, I resolved to let her go until the beginning of the ninth month, when I proposed to induce labor, in the hope of obtaining a living child. Accordingly I brought on labor in the first week of the ninth month, and found an arm presentation. Version was performed with great difficulty, owing to the fact that the antero-posterior diameter of the superior strait was not more than two and three-quarters (2¾) inches.

By using strong traction, and extreme pressure over the uterus, depression of one of the parietal bones was produced, and thereby a small child was delivered, which lived for several months. Metritis followed, and she suffered great pain in her back and limbs. There was also partial paralysis of the limbs, which slowly disappeared. Altogether it was five weeks before she recovered. At that time she was strongly advised to give up child-bearing. Some time ago she called upon me and stated that she was pregnant, and urged me to save her child if possible. I told her if she would take the risk, I would give her what I believed to be the only certain chance of having a child, and also the possibility of saving her own life. She cheerfully accepted the proposition, and expressed her determination to go to full time.

I gave the history of her case to Prof. T. G. Thomas and asked his advice and assistance. His kind reply was that he would be at my service at any time. Late in the afternoon of Oct. 28th, 1875, she called at my office, and, on examination, I found her at full time, the os uteri dilatable, and that she had slight uterine contractions.

She was ordered to go home and to let me hear from her late in the evening. At ten o'clock her husband reported that she had slight pains, but was about the house and felt comfortable. I gave directions to call me during the night if her pains increased, and not to wait longer than four o'clock in the morning. Labor progressed, but, being unwilling to disturb me, they did not call me until six A.M. on the 29th. I then found that she had good labor pains, and that the os uteri was almost fully dilated; the membranes were unruptured, and an arm and the cord were presenting. I could feel the cord pulsating through the membranes, and the fœtal heart was heard distinctly. I sent in all haste for Prof. Thomas, but most unfortunately he was engaged and could not come. I also sent for Drs. Corey, Cushing, Stuart, and Bunker. While waiting for my medical friends, I was in constant dread that the membranes would rupture and the cord become compressed so as to destroy the child.

I felt sure that I could not restore the cord and keep it in place when there was an arm presentation, and I dreaded the death of the child, which would have decided in favor of delivery by embryotomy, an operation which, under the circumstances, would have been difficult and very dangerous to the mother. Fortunately the membranes remained intact until my friends came. At nine o'clock I performed laparo-elytrotomy, according to the method of Prof. Thomas, the best, indeed the only authority on this operation. I opened the abdominal wall and also the vagina, before I ruptured the membranes. I then delivered by performing version.

Having reason to believe, from the character of the fœtal heart action, that the circulation of the child was slowly becoming interrupted, I made great haste to deliver as soon as I ruptured the membranes.

The child, which weighed ten pounds, was slightly asphyxiated, but was easily restored.

The time occupied from the beginning of the operation until the child and placenta were delivered, was fifteen minutes, five minutes longer than my former operation. The extra time required was owing to slight hemorrhage, caused by making the incision in the abdominal wall lower down than was necessary, and also by having to restore the prolapsed arm, and deliver by version.

There was no shock or vomiting after the operation, and no hemorrhage, primary or secondary, worthy of notice.

Several hours after the operation, Dr. Stuart, in passing the catheter, discovered that the bladder had been opened. The opening in the vagina had been extended so as to enter the junction of the urethra and bladder on the right side.

I am satisfied that the bladder was not wounded at the time when I opened the vagina, but that it occurred during delivery.

If I had had more time, and could have permitted the parts to distend gradually, the wound in the bladder would not have been made. It was unfortunate, if not bad management on my part, that I did not detect the wound in the bladder at the time of the operation, for then a few stitches could have been easily introduced and the catheter worn until the opening closed.

When I became aware of the accident, I was unwilling to anæsthetize my patient again and submit her to the operation of closing the wound, because I feared that I might cause hemorrhage.

The second day the temperature went up, and she became quite tympanitic, but there was no tenderness to indicate peritonitis.

The symptoms were due mostly, I believe, to a slight metritis, such as she had after other confinements. These conditions continued for about four days, but the temperature did not at any time exceed 102°, and the pulse did not go beyond 120. On the sixth day, the tympanitis was relieved by an injection containing mint-water.

Morphine was given at night to secure sleep, and quinine was used in the day in the hope of preventing malarial fever, which had troubled her, off and on, for years. From the sixth to the tenth day her condition was remarkably good. Her pulse and temperature were normal; her appetite good, and she had a scanty secretion of milk.

On the tenth day she sat up in bed, contrary to our expressed wishes, but was apparently no worse for it.

In the afternoon of the eleventh day she had a chill, followed by fever and free perspiration. She was quite well on the morning of the twelfth day, but the chill and fever were repeated in the afternoon.

Quinine was freely given on the following day, and there has been no return of chills or fever. She believes that this part of her trouble was a return of her familiar ague, and I believe that her diagnosis was correct.

The external wound healed by first intention, except at the two central stitches, where there was suppuration. Both the abdominal and vaginal wounds were completely healed on the fourteenth day. On the fifteenth day she sat up in a chair while her bed was being made, and, with the exception of the opening in the bladder, she was as well as one of her constitution could be at that date after confinement. At the end of three weeks she went out riding, and continued in good health from that time. On November 28th, I closed the small vesico-vaginal fistula, and two weeks afterward dismissed her well and sound. January 15th, 1876, she is well, and nurses her strong, healthy baby.

Finally, I wish to state positively that I believe the injury done to the bladder was the fault of the *operator*, not of the *operation*, and that I could avoid that accident in future. I am also satisfied that I could not have under the circumstances delivered that patient in any other way, with more *safety* to *herself*. I trust that the history of this case will aid in placing the operation among the chief triumphs of obstetrical surgery, to the honor of Professor Thomas, whom I believe to be its author."

CASE V. -- *Laparo-elytrotomy; operation four days after beginning of labor; recovery of mother and child.*

"The subject of this history is an unmarried Bohemian girl, 37 years of age. She became pregnant, but concealed her condition from her relatives, with whom she lived, up to the full period of gestation. This she was enabled to do by being herself very much deformed in body.

She was taken in labor on Tuesday, the 19th of June, 1877, and soon after the membranes ruptured; at least, this much was learned from subsequent inquiry. Her labor pains continued, but she did not disclose her true condition, nor did her friends suspect what was her trouble; but becoming alarmed at her continued suffering, they sent for Dr. S. Schmitzer on the morning of Friday, the 22d. The doctor found that she was pregnant at full term. The membranes were ruptured, the liquor amnii completely drained off, and the uterus contracted firmly round the child. The dilatation of the os uteri was only sufficient to admit the point of the finger.

The patient was much below the average size, emaciated, her complexion sallow, and her skin dry, and ill-conditioned in appearance. There was a well-marked forward curvature of the spine in the lumbar region; the sacrum was nearly straight, and formed a right angle with the axis of the spinal column: the symphysis pubis was deeper than normal, being about two inches. The antero-posterior diameter of the superior strait was said by Dr. Schmitzer to be one and one-fourth inches, and I am confident that it did not exceed one and one-half inches. The thighs were flexed to nearly a right angle to the body, and held there by anchyloses of the hip-joints. The knees could not be separated more than an inch and a half. The left lower extremity was four and three-fourths inches shorter than the right. A number of deep scars about the hips indicated the previous existence of large abscesses. These, existing in connection with the anchylosis, led to the conclusion that she formerly had had hip-joint disease of both sides.

Dr. S., finding the conditions described, satisfied himself that normal delivery was impossible. He then called Drs. Frickenstein and Weber to see her in consultation. These gentlemen agreed with the doctor regarding the deformity and the difficulties in the way of delivery.

I saw the patient with Drs. Schmitzer and Alexander Hutchins at six P.M., on Friday, the 22d. She was then partially relieved from pain by a dose of morphine, which was given to her in the afternoon. The os uteri was still undilated beyond about half an inch. From the character of the presenting portion, as observed through the walls of the uterus, it was presumed to be the vertex.

In consultation we agreed to first dilate the cervix, and then deliver by laparo-elytrotomy; but as the patient was not having severe pains, and we were not then prepared to operate, we concluded to wait until morning, when we would have daylight. In the mean time dilatation of the os could be attended to. Early on the following morning, Saturday, Drs. S. and H. began an artificial dilatation of the os, which was found to be a most difficult task. Owing to the deformity of the patient, the cervix was flexed backward so as to bring its axis to a sharp angle with the axis of the uterus, and there was not room enough in the pelvic cavity to permit bringing the cervix forward on a line with the body of the uterus. It was therefore almost impossible to pass the dilator through the internal os. After prolonged manipulation, dilatation to the extent of two and one-half inches was effected.

At ten A.M., on Saturday, the 23d, four days from the time labor began, we were prepared to operate. In selecting this method of operating, we were guided by the fact that craniotomy was impossible under the circumstances, not alone because of the narrow superior strait, but also from the fact that the axes of the uterus and vagina were at right angles, which made it impossible to use the necessary instruments for delivery in that way. This statement will be indorsed by Drs. Schmitzer and Hutchins, who tried to dilate the cervix. Cæsarian section was suggested by the difficulties in the way of laparo-elytrotomy; but we preferred to encounter the obstacles rather than open into the peritoneal cavity and uterus of the patient. The condition of the patient just before the operation was not encouraging. Her skin was dry and hot, tongue coated, temperature 102½°, pulse 98. Indeed, the operation was beset with difficulties from beginning to end, and on that account I will give the several steps in brief detail.

To reach the point for incision parallel to and a little above Poupart's ligament, it was necessary to raise up the abdomen and retract the soft parts of the thigh as much as possible. The parts being thus brought into view, the abdominal walls were divided through the tegumentary and muscular layers. This was accomplished without much trouble; but on reaching the region of the peritoneum, I encountered the products of a previous inflammation, which obscured all the normal anatomy. I have always believed that a previous pelvic peritonitis would greatly complicate this operation, and have dreaded that such a case might fall to my lot, and in this case I fully realized my expectations. The peritoneum, iliac fascia, bladder, and vagina were all glued together by plastic material, which rendered the normal tissues unrecognizable. This, and the space between the flexed thigh and the large abdomen being very narrow, made the difficulty of manipulating very great. The vagina also was narrow and unyielding, so that it could not be forced upward to guide us in the right direction. In this part of the operation there were three points of danger to be guarded against:

First.—Wounding the peritoneum. There is no danger of doing this when the parts are normal, for then the peritoneum can be easily recognized and lifted up from the other tissues with perfect facility; but in this case everything was changed in appearance and character, and in place of easy-sliding tissues we had lymph and adhesions, both difficult to manage.

Second.—I had learned, by former experience, that to open the vagina too near the symphysis pubis gives rise to the danger of the incision extending into the bladder during delivery.

And *Third*, if the incision is made too near to the walls of the abdomen, there is danger of wounding the circumflexa ilii artery.

We succeeded in avoiding the peritoneum and important vessels, but unfortunately the bladder, which was drawn upward and to the right by old adhesions, was wounded. That is not very surprising when it is remembered that in making this portion of the dissection I was guided mostly by the sense of touch, and the parts were so crowded together and changed in appearance as to be almost unmanageable. The point at which the bladder was wounded was just opposite the anterior superior spinous process of the ilium, a place where one would not expect to find it.

When the cervix uteri was reached through the opening in the abdominal wall and vagina, we found dilatation sufficient to admit the points of the four fingers. Manual dilatation was then made and soon completed. The only difficulty experienced was in getting the fingers between the child's head and the uterus, so firmly was the latter contracted. The head presented transversely, with the occiput to the left side. Delivery by version has been advised in this operation, and was thought of in this case, but was ruled out as being impossible, owing to the firm contraction of the uterus. Deciding to deliver with the forceps, we proceeded to use them. Here we encountered another perplexing difficulty. The thigh stood up in front of the opening in the abdominal wall and the os uteri, and prevented the introduction of the instruments. After some awkward manipulating, we succeeded in grasping the head, and then delivery was easy and speedy. The placenta came away without trouble. There was very little hemorrhage; the wound was closed with silver sutures and dressed with cotton wadding, secured by adhesive straps.

The child was markedly asphyxiated, due, no doubt, to the continued contraction of the uterus so long after the escape of the liquor amnii. It was restored after the vigorous employment of artificial respiration. It was well developed, healthy in appearance, and weighed 7½ pounds. Drs. S. Schmitzer, Hutchins, Corey, Cushing, and Hunt were present and gave their counsel and assistance in the operation.

She recovered from the anæsthetic promptly, and showed no symptoms of shock, nor did she complain of pain or discomfort.

On the day following the operation her pulse was 94, and her temperature had fallen from 102½ (which it was at the time she was delivered) to 100°. The catheter was used frequently in order to keep the bladder from being fully distended.

Dr. S. and H. observed that, after a few days, the quantity of urine retained in the bladder became less and less, and at the same time the urine was seen to escape from the vagina.

The introitus vaginæ was small and firmly contracted, which prevented free drainage, causing the urine to accumulate in the vagina and well up through the abdominal wound.

A rubber tube, perforated with small holes for about two inches at one end, was introduced into the vagina for the purpose of draining off the urine. It answered well, and for twenty-four hours the urine flowed continuously and freely into a urinal, and all appeared to progress well for a time. The patient unfortunately was ignorant, obstinate, and unmanageable. Her mental obliquities and angularities were, like those of her body, well marked. After a day or two she became dissatisfied with the drainage tube and would not let it remain any longer in the vagina. Every time that the doctor placed it there she would withdraw it and throw it away, and no argument could persuade her to do otherwise. The urine, from this time, flowed freely from the abdominal wound, and occasionally from the vagina. Owing to the disagreeable disposition of the patient, it was impossible to keep her clean or comfortable. Her appetite was good, her bowels moved regularly, she slept well on small doses of morphine at bed-time, and her pulse and temperature were normal, but it was difficult to keep her wounds in good condition. She was cared for by her sister, who, although willing, was not skilled as a nurse, and, besides, she had her household duties to perform.

Such being her surroundings, we concluded to send her to the hospital, and on the fifth of July, two weeks after delivery, she was taken there. She made the journey to the hospital, about three miles, very comfortably. When admitted, her condition gave evidence of want of proper nursing. The wound was healed except at the outer portion near the anterior superior spinous process of the ilium where the fistulous opening was. Around the opening the parts were foul and covered with a superficial slough. Most of the urine escaped from this opening. There was also a free purulent discharge.

She was placed upon tonic doses of quinine, and a little morphine at bedtime to relieve an uneasy restlessness. The wound, vagina, and bladder were kept thoroughly clean by the frequent use of carbolic acid and water. A stream was passed from the wound in the side through the vagina and then reversed. The bladder was also injected; the stream being carried in through the urethra and made to escape through the vagina and abdominal opening.

To keep the wound in the best condition for healing, a rubber tube was introduced into the fistulous opening in the side, and it made good drainage when the patient could be persuaded to keep it in place, but she often pulled it out. After a few days the house physician succeeded in passing a perforated rubber tube from the abdominal opening out through the vagina and left it there. This made perfect drainage. Sometimes the urine would flow from one end of the tube, and sometimes from the other, according to the position taken by the patient, and she was unable to remove this tube, which was a great advantage.

From this time the abdominal wound healed rapidly, and the drainage tube was finally removed about the third of August. The urine flowed then from the vagina only. To drain the vagina, a hard rubber bulb with a stem was used, which answered very well to carry off the water. The bulb was olive-shaped, and perforated closely with small holes. To the stem of the bulb a small flexible tube was attached which conveyed the urine to a vessel. A rubber urinal was obtained for her which she could wear while walking around, but for some reason, which no one could understand, she would not use it.

Most of the time since the operation the bladder has retained more or less urine, and at this stage of her progress the house physician noticed that it began to retain more and more, showing that the fistulous opening was closing. Improvement in this direction continued until the 12th of August, when the bladder had fully regained its power of retention, indicating that the fistula had closed.

At this date (August 12th) her health is as good as it ever was. In short, the recovery of the mother is complete, and the baby, which was left at home, prospered for a time, but died when eighteen days old, from bad feeding and care.

The notes here given of the case while in the hospital are brief extracts taken from the clinical records kept by the resident physician, Dr. McPharlin, to whose skill and constant care her complete recovery is largely due.

In reviewing this case of laparo-elytrotomy, I may say that a more unfavorable case for operating could not well be imagined.

The conditions of the patient in every particular relating to the operation, and the want of facilities for after-treatment, were such as to thoroughly test the merits of this method of delivery. Certainly, greater difficulties than were here encountered are not likely to occur in the future history of this operation."

The next case occurred to myself nearly eight years after my first, and is here given. As there is a great deal connected with the history of the ten days subsequent to the operation which is very interesting, I quote rather fully from the notes of Dr. Beckwith, the resident physician of the Nursery and Child's Hospital, to whose intelligence, assiduity, and devotion I feel that I am greatly indebted for the successful issue which occurred.

CASE VI.—*Laparo-elytrotomy successfully performed for both mother and child.*

On the 3d of December, 1877, I was requested by Prof. James W. McLane to see with him, at the Nursery and Child's Hospital, a woman who had been taken in labor some sixteen hours before. She resided in Harlem, about four miles distant, and had been attended there by Drs. Farrington, Dwyer, and Shrady, who, finding the pelvis so much contracted as to require an operation, had sent for Dr. McLane, and at his suggestion she was brought to New York. The labor at this time was far advanced, but her surroundings at home were so unfavorable that this was deemed the wiser course.

The woman was Irish, 20 years old, married, and a primipara. She was very small and undeveloped; one leg was contracted and bent, and the thigh firmly flexed on the abdomen. The pelvis at the superior strait had been estimated by Dr. McLane, Dr. G. A. Sabine, and the other gentlemen above mentioned, at 2¾ inches in the conjugate diameter, though I question whether it measured more than 2½. At the outlet, the conjugate diameter was long, while the transverse was estimated at 2¼ inches.

The question as to operative procedure up to the time of my arrival had been between evisceration, the child presenting by the breech, and Cæsarean section, the preponderance of opinion being decidedly in favor of the former. I proposed, as a compromise, laparo-elytrotomy, and this being decided upon, Dr. McLane very kindly requested me to perform the operation.

The patient being anæsthetized and laid upon a table, I cut through skin and adipose tissue from the superior spinous process of the ilium, along the upper edge of Poupart's ligament to the spine of the pubis on the right side of the body. Then I cut through the muscles, and coming down to the peritoneum, lifted this, and touched the vagina. Dr. McLane now passing his finger through this canal and pushing it upwards, I cut down upon it near the uterine junction. Then inserting my two index fingers, I tore the vaginal wall downwards. Immediately the uterus, contracting strongly, forced the breech of the child into the iliac fossa, and hooking the index fingers into the groins, I rapidly delivered. The child was asphyxiated, but by sharp slapping it soon recovered and cried lustily. From this time onward it did perfectly well.

The wound having been thoroughly cleansed of blood-clots by forcing carbolized water through it by means of a Davidson's syringe, was closed by silver sutures throughout. No vessels were tied, and thus no foreign substance was left within it.

The duration of the operation, from the time of the first incision to its completion, was thirty-five minutes. After its completion, the patient was put to bed, given an opiate, confined to fluid diet, and kept perfectly quiet upon the back.

From this time the history is compiled from Dr. Beckwith's notes.

Dec. 4th, patient slept well last night, quieted by morphia administered hypodermically. At 8 A.M. temperature 99°, pulse, 132. Milk given every 2 hours. 7 P.M.—T. 102°. P. 140.

Dec. 5th.—8 A.M.—T. 99⅖°. P. 124.
7 P.M.—T. 100°. P. 128.

Urine does not pass through catheter kept in bladder, but escapes per vaginam. A fistula evidently exists.

Dec. 6th, 9 A.M. T. 101°. P. 136. Wound washed out by vaginal injection of carbolized water every 8 hours; water forced out through abdominal wall freely. 10 P.M.—T. 101⅖°. P. 128.

Dec. 7th.—8 A.M.—T. 102⅖°. P. 128.

7 P.M.—T. 98⅗°. P. 116.

Dec. 8th (sixth day since operation), 8 A.M. T. 98⅖°. P. 108. Urine flowing now freely through catheter. When vagina is injected, very little water flows through wound. 11 P.M.—T. 100⅖°. P. 116.

Dec. 9th.—8 A.M.—T. 98⅖°. P. 124.

8.30 P.M.—T. 101°. P. 124.

Dec. 10th.—8 A.M.—T. 99⅗°. P. not recorded.

9 P.M.—T. 98⅖°. P. " "

Dec. 11th.—9 A.M.—T. 103°, and at 10 A.M., 104⅗°. As patient had lived in a very malarious district, rise of temperature was regarded as due to miasmatic poisoning. Quinine was given in scruple dose, and at 7 P.M. T. was 100°.

Dec. 12th.—9 A.M.—T. 101⅕°. P. 124.

8 P.M.—T. 103⅘°. P. 128.

Dec. 13th.—8 A.M.—T. 101⅗°. P. 112.

8 P.M.—T. 98⅖°.

Dec. 14th.—8.30 A.M.—T. 98⅖°. P. 92.

7.30 P.M.—T. 98⅖°. P. 88.

Patient very steadily and certainly improving. Dec. 15th, T. taken every 2 hours, 98⅖°, P. from 92 to 104.

From this time the patient went on steadily to complete recovery, the wound healing by second intention, the solution of continuity being filled up by granulations.

It is in my mind a question whether the rise of temperature was due to miasmatic poisoning, or to septicæmia. My impression is that the former condition produced it, as it was markedly controlled by quinine, freely administered.

On the 20th day after the operation, the bladder, which was undoubtedly injured by the operation, recovered its retentive power, the catheter was removed, and patient thenceforth passed her urine voluntarily.

On the 25th day after the operation, one end of the round ligament protruded from the wound, which had now nearly healed throughout its length. This was ligated and cut off.

On Jan. 3d, 32 days after operation, the wound which was originally 5 inches long, measured in length 2½ inches, and in depth ½ an inch. Vaginal examination showed on right side an opening with sharp, falciform border extending into iliac fossa, one inch in extent.

On this date the patient was discharged cured. She and her child have since done perfectly well.

In three of these cases, two of Dr. Skene's and one of mine, that just recorded, the bladder was injured so that a fistulous orifice resulted. In two of them spontaneous recovery occurred. Even had it not done so, with the means now at our disposal for the surgical treatment of vesical fistula, little weight need be attached to the occurrence of this accident. In saying this, I do not mean that the occurrence of a vesical fistula during delivery is to be regarded as a matter in itself of small moment, but that the alternative operations being either Cæsarean section or craniotomy, it should weigh very lightly against a procedure which serves to avoid them both.

I propose now to consider whether laparo-elytrotomy does avoid the dangers attending upon laparo-hysterotomy, and in what manner such avoidance is effected. The chief dangers of the latter procedure are :

1st. Peritonitis.
2d. Metritis.
3d. Hemorrhage.
4th. Shock.
5th. Incarceration of intestines in uterus.
6th. Septicæmia.

The operation of laparo-elytrotomy avoids entirely the first, second, and fifth of these dangers, and in great degree diminishes the probability of the fourth and sixth. It may be followed by the third (hemorrhage), and in place of peritonitis may create cellulitis. As neither peritoneum nor uterus are cut, the great risks of inflammation of these parts, together with that of hernia into the uterus, are avoided. The peritoneal cavity being unopened, there is little danger of that sudden nervous prostration which we style shock ; and as the wound admits of being flooded constantly with carbolized water, the probability of the occurrence of septicæmia is very much lessened.

The great danger to be apprehended is unquestionably hemorrhage. In none of the five cases here reported did it occur, but the future may belie the past in this regard. There is a congeric of large, tortuous arteries around the vagina which must be severed ; but by means of ligatures, the actual cautery, or such styptics as the persulphate of iron, hemorrhage could probably be controlled, even if it did occur.

In concluding this essay, it may be well for me to meet the question whether I regard it as proved that laparo-elytrotomy is superior in all cases as a resource practised in the interest of mother and child, to the Cæsarean section, and in many cases even for the mother, to embryulcia. As I have already remarked, when I began investigating this procedure it had, after a very imperfect trial, after inadequate consideration, and when it had been only once performed, been completely cast aside and had fallen into an oblivion which has not even in our day attached to symphyseotomy, ligation of the aorta, and many other operations which have been weighed in the balance and found wanting. In estimating its value, and endeavoring to establish upon a true basis its superiority to sacrificial methods now in vogue, it may well be supposed that I have given grave reflection to the subject. In reply to the question which I have now proposed, I would say that I do not regard the claims of laparo-elytrotomy, to being established as a standard operation, as yet proved, but that I do regard it as now sufficiently tested by experiment to deserve careful consideration at the hands of the medical profession.

Every new and grave surgical procedure must run the gauntlet of the opinions of those who reason upon it from a theoretical standpoint alone; who have given little time or thought to its consideration, even theoretically, and who know absolutely nothing about it practically. We all know how cogent is the reasoning of such philosophers, how weighty their arguments, how convincing their words. For eight years laparo-elytrotomy has gone through this period of probation; for eight years I have listened to the style of argument to which I have alluded, never, however, for a moment doubting that the operation was a good, practicable, and legitimate one, and only waiting patiently till another opportunity should offer for its trial. That opportunity has now occurred, and I bring you to-night a report of all the operations thus far performed, five in number, that you may judge by the fruits of the past what the results of the future may be expected to be:

Number of laparo-elytrotomy operations performed	5
Number of mothers now living	3
Number of children delivered alive	4

But even this exhibit falls far short of the truth, for in my first case the mother was *in articulo mortis*, and the operation was performed in the interest of the infant alone, which was born alive and uninjured; while in Dr. Skene's first it was undertaken solely for the relief of the mother, who was almost moribund, the child being already dead.

Can any one point to similar results from the Cæsarean section? Can any one point to better results *for the mother herself* after that sacrificial operation, embryotomy, by which all the children are inevitably destroyed?

These results, too, it must be remembered, have been attained by an operation in its extreme youth and imperfection of development; at a time when every operation must be viewed with leniency, and when every candid mind must admit that the future may bring improvement in its performance, and increased skill in avoiding the dangers which attach to it.

That hemorrhage may be one of its results I freely admit, as every one must do who examines the vascular supply to the walls of the vagina. I have looked for it with dread in my two operations, as Skene did in his. But in five cases no hemorrhage whatever has occurred. Why should it do so in the future if in this number it has not done so? But even admitting that it may occur, unless it be so violent and uncontrollable as to prove fatal, it may become a question whether the risks of it should not be taken, when in compensation for them we obtain immunity from the dangers of peritonitis and shock, and diminution of the danger of septicæmia, or at least the acquirement of greater facility for its treatment.

As I was in the act of delivering the child in my second case, Dr. Dwyer, one of the physicians of the patient, remarked, "I hope that the child may be born alive." Confident in the operation in this respect, I replied, almost without thinking, "Why, what is there to kill the child?" Dr. Skene's confidence in it for the mother will be appreciated from the fact that his first operation was performed in her interest alone, after the perforation of the child.

The patient upon whom I last operated will almost surely return within a year, presenting for consideration the question as to whether embryotomy, Cæsarean section, or laparo-elytrotomy would be most appropriate for her deliverance. He who, in the face of the evidence here presented, should resort to either of the two first mentioned, throwing aside the last merely from prejudice or theory, would have strong faith in his own convictions, or else little regard for the results of experience. As for me, the readiness with which I urged a procedure which certainly saved one life, and in all probability saved two in her last delivery, would certainly be sharpened by the fortunate result in her case and my increasing confidence in laparo-elytrotomy.

The operation which I am advocating is by no means difficult of performance. It may be accomplished with rapidity and certainty by any operator of ordinary skill. Let us analyze its steps. Incision through the abdominal walls is as simple as when performed for Cæsarean section. Lifting of the peritoneum is perfectly easy, and when the vagina is pushed upwards into the iliac opening by a sound or the finger of an assistant, no difficulty attends cutting through its walls. After this, delivery by version is not as difficult as when performed through the vagina.

No parallel should be drawn between the lifting of the peritoneum of the pregnant and non-pregnant subject. In the former it is ample and movable to a degree which is unknown in the latter.

I shall trespass only a few minutes longer upon the patience of the society in detailing the consecutive steps which I should advise from the experience which I have had in this operation:

First. The operator should be provided with a pocket-case of instruments, ether, Barnes' dilators, and Paquelin's thermo-cautery, or, in place of it, ordinary cautery-irons.

Second. The patient having been etherized, she should be placed upon a firm table, and the os fully dilated by Barnes' dilators.

Third. The abdominal wound should be made; the peritoneum lifted; the vagina opened; and the child delivered by version, if the head or arm present; by extraction, if the breech do so.

Fourth. The placenta having been delivered, and the uterus caused to contract firmly, the iliac fossa should be cleansed by a stream of warm water, introduced through the abdominal wound, and escaping through the vagina; and if hemorrhage exist, ligatures should be applied, if possible through the abdominal wound, to the bleeding vessels. Should this prove impossible, the vagina should be distended by a large metallic speculum, and the lips of the abdominal wound being widely separated, the bleeding points touched by the actual cautery carried down from above. Should this fail, the uterus should be made to contract firmly by ergot, and both vagina and iliac fossa be thoroughly tamponed with cotton soaked in water and squeezed, but free from any styptic. Then a broad band of adhesive plaster, and a compress should be applied over the lower portion of the abdomen.

Fifth. Should no undue hemorrhage occur, the abdominal wound should be closed by interrupted silver sutures; the vagina should be syringed out every five hours with warm carbolized water, the nozzle of the syringe being carried through the vaginal opening, and the fluid forced out through that in the abdomen. The patient should be kept perfectly quiet, nourished by milk and animal broths, and kept free from pain by opium.

KOLPO-PERINEOPLASTY: A NEW OPERATION FOR PROLAPSUS UTERI.

BY
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(With five Woodcuts.)

ON looking over the text-books on uterine surgery, no intelligent student will fail to notice, that scarcely another disease, included in that branch of surgery, suffers to the same extent as prolapsus uteri from a want of well-established therapeutic principles, upon the observance of which the practitioner may rely for complete and permanent relief. While authors almost unanimously agree on the inefficiency, impropriety, and even danger of pessaries—those "necessary evils," as Marion Sims calls them—quite as little confidence is, on the other hand, expressed in the results obtainable by operative interference. Thus patients afflicted with prolapsus uteri, after having followed with but slight benefit the directions of some regular practitioner, generally seek consolation of quacks. In view of this sad state of things, it seems to me, that every attempt to enlighten and rectify the principles required to guide the physician in his endeavors to improve the distressing condition of those poor women, should meet with a fair trial on the part of the profession. I therefore beg leave to call the attention of the professional public to the operation of kolpo-perineoplasty, which I believe, in its results, to be far superior to any other method. This most valuable contribution to uterine surgery was first devised and practised, several years ago, by Prof. Bischoff, of Basle, Switzerland. Having been connected with Dr. Bischoff as his assistant, I had ample opportunity to become thoroughly familiar with his operation, both while assisting others and while performing it myself, and to test its efficacy by examining a number of patients operated upon more than a year previously. Therefore, I am both willing and able to assume full responsibility for all the statements made in this paper.

I shall divide this article into five chapters, as follows:

Chap. I. In this chapter I shall call the attention to several anatomical facts, which I think important to the pathogeny of falling of the womb, and which, if borne in mind, will assist the reader to understand the motives which suggested kolpo-perineoplasty.

Chap. II. contains a short sketch of the different operations hitherto advised or performed for prolapsus uteri.

Chap. III. describes the advantages of Bischoff's operation, especially as compared to Simon's posterior kolporhaphy.

Chap. IV. contains the detailed description of the new operation.

Chap. V. contains statistics, based upon the histories of 12 cases of kolpo-perineoplasty examined by me from one to five years after the operation and are related in proof of the value of the method.

I.—REMARKS ON THE ANATOMY AND PATHOGENY OF PROLAPSUS UTERI.

In the healthy body the uterus occupies a somewhat anteverted position, the axes of the vagina and the uterus being nearly at right angles to each other (Fig. 1). Of recent writers on this subject, Schulze laid particular stress on this fact, although at the same time clearly stating that this anteverted position of the uterus is by no means a fixed and universal one, but subject to continual changes, especially in the antero-posterior diameter, in accordance with the rhythmical expansion and contraction of the abdomen at each inspiration and expiration, the changes in posture of the whole body, and the degrees of emptiness or fulness of the bladder and the rectum. However, after every such diversion, the uterus always returns to its position of moderate anteversion, with the os tincæ touching the posterior vaginal wall. The force by which the normal position of the uterus is preserved is the natural tone and elasticity of all the tissues connected with that organ; viz., the ligamenta lata and rotunda, the plicæ vesico-uterinæ, the vagina (whose tissues are interwoven with those of the cervix), and the perineum. Pregnancy and parturition at term, as is well known, deprive all these uterine supports of their inherent tonicity, which is especially true of vagina and perineum during the expulsion of the fetus. If the puerpera fails to take proper care of herself, but leaves her bed and begins working at too early a period after delivery, before the tissues concerned have regained their proper tonicity, they of course prove unequal to their duty, and, yielding to the weight of the uterus, give rise to displacements of that organ of various kinds.

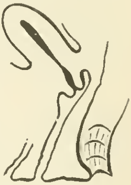

Fig. 1.

Now, while it will easily be understood that relaxation of all the uterine supports above named must precede the descent and protrusion of the organ through the vulvar orifice, there is still another point which seems to me to play a prominent part in the pathogeny of that affection known as *total* prolapse of the uterus, in which the external uterine orifice protrudes from the introitus vaginæ. If the vagina were merely relaxed, like the other uterine supports, the anteverted position of the womb would not allow it to escape from the vulva, for the vagina would not permit the long axis of the uterus to pass. Descensus of the uterus, with the fundus lying on the bladder and the cervix pressing against the rectum, will then be the only displacement possible. Therefore, in order to bring about the protrusion of the cervix uteri from the vulvar orifice, besides relaxation of all the ligaments, there must take place such a change in the proper relation between vagina and uterus as to allow the latter to enter the former in the same direction as its long diameter, *i. e., the utero-vaginal axis, instead of forming a right angle, as normal, must become a straight line* (Fig. 2). Both organs, uterus and vagina, may help to produce such a change. The former, by failing to resume after labor its normal anteverted position, and resuming, from whatever cause it may be, the *first degree of retroversion;* the latter, by not regaining its normal direction, which may happen thus: In order to discharge its contents, the uterus expels the fetus in the direction of its long axis into the vagina. The relation of this axis to the vagina being, as stated, nearly a right angle, the fetus can pass the rima vulvæ only if the vagina is brought into the same direction with the long diameter of the uterus, so that the vaginal outlet is just opposite the orifice of the uterus. Under the pressure of the fetus advancing in the direction of the long axis of the uterus, the vagina and perineum will be stretched to the utmost (even to rupture), in a backward direction, so that, instead of running obliquely downward from the promontory to the lower border of the symphysis, the vaginal axis during the progress of the child will assume a more perpendicular course, in conformity to the uterine axis. After the expulsion of the child, this change in direction, by the backward-pushing of the vagina, may become permanent, either in consequence of an absolute loss of elasticity of the tissues concerned, or, in the majority of cases, of the rupture of the perineum. This change in the relation between uterus and vagina having occurred in conjunction with the complete relaxation of all the

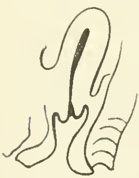

FIG. 2.

tissues, no further resistance is offered to the protrusion of the uterus, especially if the patient rises too soon after labor, and is compelled to undergo severe exertion.

Clinical observations afford ample proof of the correctness of these deductions. In case of total prolapse of the uterus, we always find, besides extraordinary relaxation and flabbiness of the vagina and perineum, a condition of the utero-vaginal axis, caused by a more or less pronounced state of retroversion of the uterus, as well as by the pushing back and perpendicularizing of the vaginal axis, the latter usually in consequence of perineal laceration (Fig. 2). Never, I presume, is a *highly* ante- or retroverted uterus found protruding through the orifice of the vagina.

Cases have been described of extensive rupture of the perineum, into the rectum even, in which the uterus still retained its normal position; but they do not disprove our conclusions, since they merely show that the other supports of the uterus, minus vagina and perineum, fully sufficed to sustain the organ. Further, if hypertrophy and elongation of the cervix uteri is held to be the prominent feature of prolapsus, this view in no wise contradicts the pathogeny of procidentia entertained by us, since, so long as the fundus of the uterus is at its normal height, hypertrophy of its cervix is a disease *sui generis*, and can never be confounded with what we call prolapsus uteri.

II.—CRITICAL REMARKS ON THE VARIOUS METHODS HITHERTO DEVISED FOR OPERATING FOR PROLAPSUS UTERI.

Having given what seems to be the *conditio sine qua non* for the development of prolapsus uteri, I shall now proceed to speak of its treatment. For reasons alluded to in the introductory chapter, I shall pass by all mechanical contrivances and confine myself entirely to the operative procedures. It need hardly be said that it is utterly beyond the power of the surgeon to replace the uterus in its normal position, for there are no means at his disposal to restore to the tissues concerned their lost tone. Fortunately, in order to get a satisfactory result, this is not even necessary, for it has repeatedly been shown that all the distressing symptoms, which induced the patient to call upon the surgeon, disappear if he succeeds in protecting the uterus from the deleterious influence exercised upon that organ by exposure to the air and the friction of the clothes. The great question is, however, How can we secure this result *permanently?* And it is best answered by comparing the methods hitherto employed and their respective results.

As the reader will find in any text-book a detailed synopsis of the operations in question, I shall, for brevity's sake, give merely the outlines of the most important features of those operations which I deem indispensable to the ready comprehension of the *modus operandi* intended to be described in this paper.

Anatomically the methods of operating for total prolapsus of the uterus may be grouped under the three following heads:

1. Cases in which the field of operation is the vulva, perineum, and orifice of the vagina.
2. Cases in which the field of operation is the vagina.
3. Cases in which the field of operation is the perineum, introitus vaginæ, and the vagina proper.

As regards the results obtained by these operations, those under 1, merely afford a covering of living tissue to the uterus lying at the vaginal orifice; those under 2, prevent the uterus from protruding through the mouth of the vagina by narrowing that orifice; and of the methods comprised under 3, one adds to the narrowing of the vagina an agent to be referred to hereafter.

1. *Operations merely affording a covering for the uterus lying in the introitus vaginæ.*

First to be mentioned is *episiorhaphy*, which consists in denuding and uniting by sutures the vulva from the posterior commissure so far forward as to leave but a small outlet for uterine and vaginal discharges. The uterus, which is lying in the mouth of the vagina, is thus immediately after the operation covered by living tissue, prevented from protruding, and protected from excoriation, etc. So weak is this barrier, however, that it soon gives way to the downward pressure of the uterus and allows that organ to emerge through the relaxed vaginal outlet. One case is also reported in which the relaxed perineum formed a species of hernia containing the uterus, which was large enough to impede locomotion. Besides, the mucous secretions occasionally accumulate in the perineal pouch, and, by decomposing, give rise to inflammatory irritation. Of the numerous modifications to which episiorhaphy has been subjected, Kuechler's method is the most prominent. Besides the vulva and perineum, Kuechler denudes the mouth of the vagina in the shape of a U; the mucous membrane and the perineum are each united separately. All these modifications, however, share the fate of the original method: a return of the displacement may confidently be expected sooner or later—a result depending on the laxity and distensibility of the tissues employed in the enlargement of the perineum.

2. Scarcely better results than by episiorhaphy are obtained by *elytrorhaphy*, or narrowing of the vagina. Many different methods have been devised for constricting the vagina. Some surgeons applied caustics, and even the hot iron, either to the length or the breadth of the vagina; others denuded oval spaces of the anterior or posterior vaginal wall, which they united by sutures. Such was elytrorhaphy as originally invented by Marshall Hall. Sims' anterior kolporaphy belongs in this category, its peculiarity consisting only in the V or ∇ shaped form of the denudation. Blasius and Desgranges attempted to narrow the vagina by producing partial gangrene of the mucous membrane; the former by means of kolpo-desmoraphy, *i. e.*, ligation of portions of the mucous membrane; the latter by means of "le pincement du vagin," *i. e.*, by pinching up the mucous membrane in numerous spots with strong serre-fines. The most astounding proposal was made by Chipendale, who suggested the infection of the vagina with gonorrheal poison for the purpose of producing constriction of the canal by means of the shrinkage of the submucous tissue following the vaginitis! If, what has been said above about thedevelopment of prolapsus uteri, is borne in mind, it will readily be understood why simply narrowing the vagina does not answer the purpose; for, after such an operation, the uterus fills the constricted portion like a wedge, with its long diameter in the same axis of the vagina. Under these circumstances the obstacle opposing the prolapsing uterus proves too weak, and a return of the protrusion is almost the universal rule after any operation for simple constriction of the canal.

3. Under the head of operations on the vulva as well as the

vagina belong the method of Baker Brown and the posterior kolporhaphy of Simon. The former consists in denuding and bringing together the posterior half of the vulva and introitus vaginæ as far up into the canal as two to three centimetres. The wound is united from the perineum, and the result of the operation is elongation of the perineum and corresponding diminution of the vaginal outlet. This operation, it will be noticed, is nearly the same as Kuechler's episiorhaphy, and is inefficient for the same reasons, viz.: the inability of the weak barrier to withstand the weight of the uterus aided by intra-abdominal pressure.

Simon's posterior kolporhaphy is the only operation which has achieved results of several years' duration, and therefore deserves especial mention. From the posterior half of the vulva and the posterior wall of the vagina, Simon detaches a piece of skin and mucous membrane, 5 to 6 centimetres long, and of the same width at the vulva, but gradually becoming smaller towards the fornix vaginæ (4–5 cm.). The vaginal and the perineal wound are united separately by silk sutures. While personal experience has fully convinced me of the value of posterior kolporhaphy, I must object to Simon's explanation of its effects, which, he says, consist alone in the narrowing of the vagina. A glance at the wound shows us that, if its edges are brought together by sutures, the vagina is not only narrowed, but the axis of the narrowed portion of the canal is at the same time brought slightly forward, as a result of the gradual diminution in width of the denuded part towards the cervix (from 5 to 6 down to 4 to 5 cm.). In consequence of this, the uterus and vagina regain in some way the angular relation already demonstrated as normal. The vaginal outlet is now no longer in the same direction as the line of prolapse of the uterus (the long diameter). Should the organ protrude again, it would be compelled to pass with its long diameter through the constricted part of the vagina, which, of course, cannot occur.

However, in spite of the admitted efficacy of posterior kolporhaphy, there are the following objections to be made to the operation: 1st, the performance of the operation, especially the introduction of the sutures in the vagina, is very difficult, and requires unusual skill and ingenuity on the part of the operator. 2d, owing to the great tension to which the edges of the vaginal wound are subjected, first intention easily fails, and if the wound is allowed to heal by granulation, the final result falls short of what was intended. I know of a case where, for this reason, the operation had to be repeated. 3d, the wound made by the operation is a very grave one, and the loss of blood considerable.

III.—BISCHOFF'S KOLPO-PERINEOPLASTY COMPARED WITH SIMON'S POSTERIOR KOLPORHAPHY.

I shall now proceed to describe kolpo-perioneoplasty as devised by Bischoff. I think I shall succeed in showing that this method, while free from the objections raised against kolporhaphy, is also a more rational procedure.

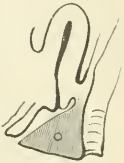

Fig. 3.

From the posterior wall of the vagina a tongue-shaped flap is detached, from 4 to 6 centimetres in length, and 2 to 3 cm. in width. The base of this flap is about 4 to 6 cm. above the posterior commissure. Then, on both sides of this flap, the vagina is denuded of mucous membrane in form of two triangular pieces. The lateral edge (Fig. 4, *m*, *k*) of each triangle ascends from the base of the flap to the middle of the corresponding nympha (Fig. 4, *k*), and to it the flap is attached by sutures (Fig. 4, *i*). In order to enlarge the perineum, and give the displaced flap a strong support, the whole vulva, from the middle of the nymphæ to the posterior commissure, is denuded, and the wound closed from the perineum by sutures (Fig. 5). It will be noticed that this mode of operating resembles the operation of Langenbeck for lacerated perineum. There is, however, decided difference between these two methods, since Langenbeck merely detached the mucous membrane so far as it was drawn down into the perineal cicatrix, and contented himself with re-establishing the normal properties of the perineum. The essential feature of kolpo-perineoplasty is, therefore, the following: *The lower part of the vagina is not only narrowed, but, owing to the elongation of the perineum, its axis is brought forward, in consequence of which the rela-*

tion between uterus and vagina becomes, in some way, normal; i. e., the uterus is again anteverted (Fig. 3).

The advantages which I claim for kolpo-perineoplasty are the following:

1. The uterus is retained perfectly at the angle which the utero-vaginal axis now forms, for two reasons, first, because the uterus presents its longest diameter to the constricted portion of the vagina, and second, because the vaginal outlet no longer lies in the line of descent of the uterus. It has been suggested to remedy the prolapsus uteri by placing the organ in anteversion, and securing it in that position by a pessary; similar is the result we aim at in performing kolpo-perineoplasty, but since the uterus is not susceptible of an operation for placing and retaining it in anteversion, we change the direction of the vaginal axis in order to produce that angular relation between uterus and vagina. As I pointed out above, Simon, in performing posterior kolporhaphy, endeavored merely to narrow the vagina; therefore, what seems to be the most efficient factor in retaining the uterus, namely, the re-establishment of an angular relation between uterus and vagina, belongs but accidentally to his operation, and for this reason chiefly is kolporhaphy inferior to kolpo-perineoplasty, whose prominent feature is to give the uterus, so to speak, a normal anteverted position.

2. Kolpo-perineoplasty is very easily performed, as there is no difficulty in rendering the field of operation accessible.

3. Union by first intention is the rule with kolpo-perineoplasty, which is accounted for, *a*) by the absence of unusual tension of the edges of the wound; *b*) by the accuracy with which the accessibility of the field of operation permits the separation of the mucous membrane and the introduction of the sutures, and *c*) by the protection of the wound, through the flap, from irritation by the vaginal discharges—an accident very liable to occur in kolporhaphy, where the wound lies in the median line of the posterior vaginal wall and forms a species of gutter for its secretions.

4. The injury inflicted is not very serious, as the whole flap is used to cover a portion of the wound. The loss of blood can be reduced to a minimum, if the surgeon closely follows the directions given hereafter.

5. The operation in no way interferes with cohabitation, impregnation, or parturition at term, as will be shown by statistics.

IV.—DETAILED DESCRIPTION OF KOLPO-PERINEOPLASTY.

Besides the instruments necessary to perform any plastic operation, the surgeon requires several flat specula for the purpose of exposing the vagina.

Assistants.—Four trained assistants suffice: A administers the anesthetic, B and C support the legs of the patient and assist the surgeon on the field of operation; D has charge of the instruments. Additional assistance may be afforded by nurses.

Preparation of the patient for the operation.—Before the operation is undertaken, the uterus, if necessary, should be replaced and any inflammatory symptoms (such as profuse uterine discharge or ulceration of the cervix) removed. On the day preceding the operation, the bowels are properly evacuated by a laxative, and in the evening the rectum cleansed by enemata.

Position of the patient.—The patient occupies the ordinary lithotomy position. Standing on the right side of the patient, the assistant B fixes the corresponding leg by pressing the right thigh of the patient with his right upper arm against his chest. In a like manner C seizes the left leg, and both assistants thus have their hands free to aid the operator.

Operation.—The legs of the patient being held by B and C as described, the field of operation is fully exposed in the following manner: By means of a flat speculum B elevates the anterior wall of the vagina, and then with the three middle fingers of his right hand on the right side of the vulva, and C doing the same with his left hand on the other side, they both together separate the labia and freely expose the posterior wall of the vagina (Fig. 4). Should the operator be hindered by the fingers of his assistants, specula may be substituted, but the steady equal tension of the skin necessary for the proper use of the knife will not so easily be secured. The patient having thus been placed, and the field of operation exposed, the operator's task is, *first*, to detach a flap from the posterior wall of the vagina, and to denude the posterior half of the vulva, together with the lower part of the vagina on both sides of the flap; *second*, to bring together the denuded edges in a proper manner.

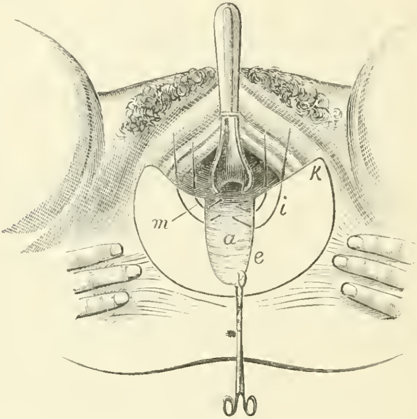

FIG. 4.

1. *Detaching the flap and denuding the vulva and the lateral portion of the lower vagina.*—From the middle of the posterior commissure, at the boundary between skin and mucous membrane, the surgeon makes a semicircular incision upwards into the vagina, first on the left and then on the right side, in such a manner as to circumscribe a flap some 4 to 6 centimetres long and 2 to 3 cm. wide (Fig. 4, *a*). The point of this flap (Fig. 4, *e*) is then grasped with the forceps and detached from its bed with the knife, while the remainder of the flap is best separated from the recto-vaginal septum by means of the nail of the index finger or the handle of the scalpel. Dissecting off the flap in this way is not only an easy procedure, but also one much less liable to injure veins, large plexuses of which cover the rectum at this spot, the wounding of which must give rise not only to tedious hemorrhage, but often endanger life by pyemia and embolism. In those frequent cases in which the boundary between skin and mucous membrane is not well marked, on account of an old cicatrized rupture of the perineum,

the whole cicatrix is, of course, omitted from the flap. The flap having been detached, the operator carries the knife from its base (Fig. 4, *m*) upwards on both sides as far as the middle of the nymphæ (Fig. 4, *k*). This line is usually a straight one, but becomes more or less curved (the concavity of the curve directed towards the flap) in case of redundancy of the mucous membrane. In that way a triangular or somewhat oval piece of mucosa is circumscribed on each side, which the surgeon detaches, beginning at the base of the flap (Fig. 4, *m*), and working almost exclusively with the nail or handle of the knife. In order to obtain an elongation of the perineum, a U-shaped piece of superficial tissue (partly skin, partly mucosa) is excised from the posterior part of the vulva. The arms of the U go up as far as the middle of the nymphæ, where they unite with the denudation of the lateral portion of the inferior vagina. The tissues removed by this U-shaped denudation belong to the labia majora and minora and to the posterior commissure and perineum. There is generally very little trouble in arresting the hemorrhage. As a rule there are but a few small arterial branches on either side of the introitus, the spurting of which is readily arrested by torsion. In case of venous hemorrhage, continued compression with cold sponges answers best. As soon as the field of operation is free from trickling blood, the surgeon ascertains whether the surface is perfectly clean. Occasionally small patches of mucosa or skin are left in the wound, which occurs more frequently when the knife was used exclusively during the dissection. Such spots are sometimes recognized, not by sight, but by the index finger passed over the wound or thrust into the rectum. Particular attention should be paid to the posterior commissure, where small cicatricial patches are easily overlooked. Careful denudation and absolute arrest of hemorrhage, even of oozing, are the factors on which union by first intention chiefly depends.

Sutures.—The flap is first secured to its new attachments by interrupted sutures. Beginning at the base of the flap, they are applied in such a manner as to bring the apex of the flap (Fig. 4, *e*) in contact with the lateral margin of the denuded part bordering the flap (Fig. 4, *i*, *k*). The most suitable instruments for these sutures are small sharply-curved needles and a lead-padded needle-holder; catgut or No. 0 of the well-known Hamburg (raw Chinese) silk is the best sewing material. The coadaptation of the edges of the wound is materially facilitated by seizing the point of the flap with the forceps, which, when allowed to hang, will, by its weight, give the flap the desired tension (Fig. 4); 4 to 6 sutures on each side will suffice. The flap being adjusted, the perineal wound is closed. The needle should include as much tissue as possible, in order to bring all the parts in close apposition down to the bottom of the wound; for this purpose the needle is introduced into the skin from 1½ to 2 cm. from the edge of the wound. In several cases, we were led to fear that the flap, which at this stage of the operation was already attached forward and above, would not touch the bottom of the wound; it was, therefore, included in the suture, as seen in Fig. 5, *p*. Three or four sutures applied at intervals of 1 to 1½ cm. ordinarily suffice to close the whole perineal wound. For these sutures, strong-curved needles, armed with silver wire, suit best. I prefer the wire, because it may be left longer without irritation. Before applying the sutures, the wound is washed with carbolized oil (10 per cent), which is best done by means of a cotton tampon soaked with that liquid, and held in contact with the wound, till the last suture is adjusted.

Before describing the after-treatment, I will mention a few modifications of these technicalities. It is evident that, by making the flap smaller or larger, and also by increasing or diminishing the denudation at the vaginal outlet and perineum, the surgeon can break the axis of the vagina at a point more or less distant from the introitus, and also more or less constrict the vagina and elongate the perineum. He must recollect, however, that the efficacy of the method depends, in the first place, not on merely narrowing the vagina, but on changing the direction of its axis, for which purpose the support of a long, thick perineum is required. During our later operations, we adopted the plan of marking out the whole wound before denuding any portion—a precaution which proved advantageous in procuring perfect symmetry.

After-treatment.—After the operation, which consumes from 40 to 60 minutes, a tampon soaked in carbolized oil is introduced into the vagina, and the wound on the perineum covered with a rag wet in the same liquid, on which a large cotton tampon is fastened by means of a T-shaped bandage, in order to exert some pressure, and to prevent the filling of the wound with blood. No farther interference on

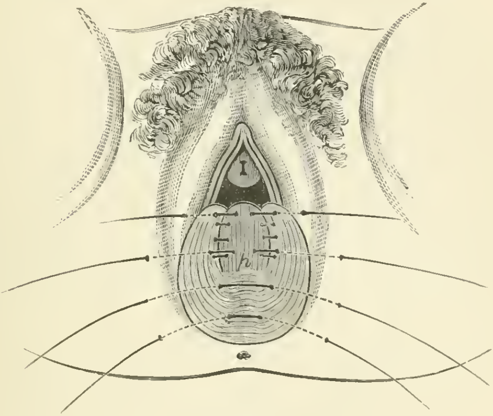

Fig 5.

the part of the surgeon is required, the patient being left entirely to her own care. No catheter and no protracted use of opiates is needed, as was formerly indicated in similar operations. As in all fresh wounds, due attention should be paid to diet and proper rest of the wounded parts. After the operation, the latter is best obtained by directing the patient to occupy the dorsal decubitus with knees bent and fastened together. If the bowels move daily, it does not matter; but, as a rule, they should be constipated until the 8th or 10th day, when some saline aperient, such as Hunyadi Janos, is given. Union by first intention is the rule, if the operator observes the principles long established for that purpose, particularly if the antiseptic treatment be carefully pursued. After about two weeks, the perineal sutures are removed, while those in the vagina are not disturbed, as catgut is partially absorbed, and the fine silk sutures, after sloughing through, are expelled with the vaginal discharges.

The foregoing description of the operation relates to simple and uncomplicated cases of prolapsus uteri. That no change in its principles is necessary in order to adapt it to other cases, however complicated, will be shown by the following remarks.

1. *Prolapsus uteri complicated with prolapsus vaginæ.*—As a slight prolapse of the anterior wall of the vagina is found in almost every case of prolapsus uteri, I shall speak here only of those cases in which, after the reposition of the uterus, the vaginal mucous membrane still appears as a tumor in the superior portion of the vulva. The surgeon need scarcely be advised in such a case to remove with the knife the redundant mucous membrane and unite the wound longitudinally, after which, if union has taken place, kolpo-perineoplasty should be performed. If prolapsus of the posterior wall of the vagina (rectocele) is present, the detachment of the flap, as above described, is performed, and the superfluous mucosa removed by trimming the flap or enlarging the bilateral denudation of the vagina.

2. *Extensive laceration of the perineum* may complicate the operation. So long as the rupture does not extend into the rectum, the operation is performed as above described, Bischoff's method being to some extent a modification of a plan devised for uniting old perineal lacerations. If, however, the rupture extends into the rectum, it is evident that the materials for constructing a new and complete perineum are wanting. Still, even in the most desperate cases of the kind, sufficient vaginal mucosa might be separated from the rectum to establish a sort of support, which may serve as a base for a copper-wire pessary.

3. *Hypertrophy of the cervix* is the last complication to be mentioned. From the fact that hypertrophy of the cervix is a common occurrence with protrusion of the uterus, Huguier proposed and frequently performed amputation of the cervix as a radical cure. There can be no doubt that, should simple hypertrophy of the cervix ever cause the symptoms of prolapsus uteri, amputation of the enlarged neck would at once restore the patient to health. Great benefit will also be obtained by the operation if hypertrophy of the cervix accompanies actual prolapsus uteri. Ablation with the knife is preferable to the use of the galvano-cautery or ecraseur, because

injury to the peritoneum is thereby better avoided, and the hemorrhage acts as an antiphlogistic, and reduces the weight and turgescence of the uterus.

It will thus be seen that Bischoff's kolpo-perineoplasty may be performed as easily in the most complicated as in the typical cases of prolapsus uteri. Further, if the protrusion of the uterus is not yet complete, but if extensive laceration of the perineum, together with some degree of retroversion, indicates the probability of prolapsus at an early day, kolpo-perineoplasty will remove that danger.

V.—STATISTICS OF KOLPO-PERINEOPLASTY.

In order to give the profession an opportunity of judging of the correctness of the statements just made, I will conclude this paper by presenting the histories of twelve cases operated upon by Bischoff's operation at the University Hospital at Basle. Since it is conceded that episiorhaphy and elytrorhaphy both succeed in preventing the protrusion of the uterus from the mouth of the vagina for a certain time; but that, after weeks or months, these feeble supports give way, and the organ prolapses, the superiority of any other method will consist mainly in *its power of procuring retention of the uterus for years or an indefinite time, even when the patient continues to live under the same circumstances as when she acquired the deformity.* It was with the distinct object of solving this question that I selected the following twelve cases out of twenty-one, in which the operation has been performed successfully as regards the simple healing of the wound. But I thought it necessary that a certain and not too brief a period should have elapsed before reporting the case as cured, in order to give the efficiency of the operation a fair test. The twelve cases, therefore, comprising these statistics must be regarded, not as a selection of *good ones* from the whole number of kolpo-perineoplastic operations, but as all the cases which I was able to trace and examine by finger and eye, one year at least after the operation.

CASE I.—D. R., 24 years of age. Admitted Dec. 2d, 1869. Married, mother of four children. Suffering from prolapsus uteri since her fourth confinement, in August, 1868. Her sufferings were such as to cause hysterical convulsions, even with loss of consciousness. Jan. 5th, 1870, kolpo-perineoplasty was performed, and union by first intention obtained, a small perineal fistula excepted, which subsequently healed by granulation. Jan. 29th, the patient was discharged completely restored. She resumed her occupation as a midwife till the autumn of 1873, when she presented signs of abdominal pregnancy, which gradually subsided. In Jan., 1874, she again became enceinte, and, at full term, gave birth to a strong and healthy girl, the perineum being uninjured by the passage of the fetus. On the fourth day, however, the patient died of peritonitis, induced by the presence of the lithopedium.

CASE II.—D. M., 33 years of age. Has been confined five times. After her first labor, seven years previously, she began to suffer from prolapsus uteri, and, when admitted to the hospital, Feb. 18th, 1870, there was found a complete prolapse of the uterus, complicated with a large laceration of the perineum. March 1st, kolpo-perineoplasty, but union by first intention did not take place, owing to the patient's disobeying the directions given her. April 14th, the operation was repeated, and this time the wound healed without suppuration. May, 13th, 1870, the patient left the hospital in full health. In May, 1872, she gave birth to a healthy girl, the perineum being unhurt.

Condition, June 3d, 1875, *i. e., five years after the operation:* Living in the lowest conditions of life and doing all the housework in her numerous family, the patient has enjoyed fair health since the operation. For some time, however, she experiences a sensation as though the womb were about to "come out again." Examination showed the perineum to be about 2½ cm. broad, moderately solid and dense, the rima pudendi gaping and permitting through its superior half the protrusion of a portion of the anterior vaginal wall of the size of a walnut. Leucorrhea was present. The orifice of the uterus was about 3 cm. above the posterior commissure, and the most forcible straining of which the patient was capable did not succeed in forcing the os down to the mouth of the vagina.

CASE III.—J. R., 38 years of age, married, has had several children. Admitted to the hospital July 3d, 1871, with total prolapse of the uterus and hypertrophy of the ulcerated cervix. July 13th, the neck of the uterus was amputated. July 19th, kolpo-perineoplasty. Sept. 6th, the wound having healed by first intention, the patient was discharged in good health.

Condition, May 25th, 1875, *or about four years after the operation:* The patient gives a very gratifying account of her general health since the operation. She attends to her work as laundress and ironer, being often compelled to stand the whole day, without suffering at all from her former trouble. Examination shows the perineum to be about 2½ cm. broad, moderately thick and solid. The anterior wall of the vagina projects to the size of a walnut from the superior portion of the vulva. Leucorrhea. The orifice of the uterus is 2½ cm. above the introitus vaginæ, touching the neck of the angle formed by the posterior wall of the vagina, which is still distinctly to be felt.

Case IV.—O. J., 33 years, delivered of her first child by forceps one year previously, several weeks after which event she began to suffer from prolapsus uteri. On admission, Jan. 7th, 1873, there was found complete prolapse of the uterus, with considerable protrusion of the anterior vaginal wall and perineal rupture of the second degree. After anterior elytrorhaphy had been performed and the wound had healed, kolpo-perineoplasty was done Jan. 20th. Union by first intention. Discharged Feb. 22d.

Condition, June 4th, 1875, *about* 2½ *years after operation:* Patient works in a silk factory, mostly standing, and, besides, does all her housework. She is married, and is no longer troubled with prolapsus, but suffers from leucorrhea and constitutional debility, the cause of which is readily found in anemia and the insufficient nourishment incidental to her social position. On examination, I found the perineum 5 cm. broad, very strong and thick. The uterus is anteverted, the os tincæ 4 cm. above the introitus vaginæ. During the winter of 1875–76, I attended the patient in the clinic, for a miscarriage at the sixth month. The perineum remained intact.

Case V.—W. A., 47 years of age. Has had one child. On admission, Feb. 10th, 1873, the patient had suffered for ten or twelve years from complete prolapsus uteri, the cervix being at the same time greatly hypertrophic. After amputating a portion of the cervix, kolpo-perineoplasty was performed May 17th, 1873. Union by first intention. Discharged June 14th.

Condition, January, 1875, 1½ *years after operation:* All the symptoms of prolapsus uteri have disappeared. The patient continues single, and does housework in the country. Length of perineum, 5 6 cm.; thickness, measured 2 cm. behind posterior commissure, is 3.8 cm.

Case VI.—E. W., 31 years of age. Two children. When admitted, April 2d, 1873, had suffered for two years from total prolapsus uteri and ulceration of the neck. April 4th, the cervix was amputated with the galvano-cautery, which was followed, May 7th, by kolpo-perineoplasty. Union by first intention.

Condition, June 16*th,* 1875, *two years after operation:* Relieved of all her former sufferings; works in the country (making hay). Perineum, 6 cm. long, very strong and thick. The introitus vaginæ scarcely permits the passage of the finger. The external os is situated 5 cm. above the vulva in an almost perpendicular position to the angle formed by the posterior wall of the vagina. Not married.

Case VII.—B. P., 53 years. Has had five children. When admitted, June 28th, 1873, had been suffering for eleven years from total prolapse of the uterus, complicated with extensive rupture of the perineum. June 30th, kolpo-perineoplasty; first intention.

Condition, June 2d, 1875, *about two years after operation:* Married, and doing all the housework in her numerous family. Feels well, but during the last three months it seems to her that the womb has a tendency to descend again. Examination showed the perineum to be 4 cm. long, thick, but not very strong. Rima pudendi gaping; leucorrhea. The os uteri is ulcerated, and 2½ cm. above the posterior commissure, touching the posterior wall of the vagina. Even when the abdominal muscles are exerted with full force, the cervix does not descend to the vulva.

CASE VIII.—G. T., 29 years; 4 children. Admitted July 4th, 1873. Total prolapsus uteri for several years. July 12th, kolpo-perineoplasty; first intention. Discharged July 28th.

Condition, July 2d, 1875, *nearly two years after operation:* Patient, although married and working in an erect position all day in a factory, is entirely relieved of her prolapsus. In January, 1875, she gave birth to a child at term, the perineum remaining intact. On examination it was found 4 cm. long, and very strong. External os 4 cm. above introitus vaginæ, resting in a distinct groove in the posterior wall.

CASE IX.—H. Sch., 33 years; 5 children. When admitted, June 24th, 1873, had been afflicted for more than a year by total prolapse of the uterus, complicated by a medium-sized rupture of the perineum. July 7th, kolpo-perineoplasty; first intention. Discharged July 24th.

Condition, May 27th, 1875, *nearly two years after the operation:* Married; lives on the fourth story, and works in a factory. Feels entirely relieved of her trouble. Perineum 5 cm. long, very strong and thick. Cervix resting in a shallow groove of the posterior vaginal wall. Feb. 13th, 1876, I attended the patient in labor at term During the passage of the head through the vulva, the skin of the median portion of the perineum burst superficially for the space of 1 centimetre. This wound was sewed at once, and healed by first intention. During the summer of 1876 I saw the patient repeatedly, and found her doing well.

CASE X.—B. Sch., 48 years; 4 children. On admission, January 29th, 1874, found patient suffering for four years from complete prolapsus uteri with large perineal rupture. Jan. 21st. kolpo-perineoplasty; first intention. Discharged Feb. 24th.

Condition, May 31st, 1875, *nearly* 1½ *years after operation:* Married, and living in the country. Doing hard work, such as threshing. Feels much relieved by the operation. The uterus never protruded again. Perineum 4 cm. long and moderately strong. Vulva gaping. The cervix touches the posterior wall of the vagina at about 2 cm. above the posterior commissure.

CASE XI.—D. Str., 50 years; five children. Has been suffering for several years from complete prolapsus uteri. Admitted May 2d, 1874. May 5th, kolpo-perineoplasty. Discharged in the beginning of June.

Condition, May 31st, 1875, *one year after operation:* Married, and doing her housework in the country. In perfect health. Perineum 3.8 cm. long, 1½ cm. thick, at a distance of 1 cm. from the posterior commissure. Uterus anteverted, cervix resting on the posterior wall of the vagina.

Case XII.—K. B., 39 years; mother of several children. Admitted Feb. 5th, 1874. Has been suffering for ten years from complete laceration of the perineum, prolapse of the uterus and the rectum, accompanied by fecal incontinence. Feb. 7th, a piece of the rectal mucous membrane, about 1½ cm. long, was removed, the vaginal flap of some 6 cm. in length detached from the rectum, and the operation concluded in the usual manner. Union by first intention having been obtained throughout, the patient left the hospital March 6th, entirely relieved of her loathsome affliction.

Condition, May 31*st*, 1875, *fifteen months after operation:* Married, and doing her housework in the country. Health continues good. The perineum, although only 2 cm. long, is very strong; the vulva gaps somewhat. Uterus anteverted; cervix touching the posterior wall of the vagina at a distance of 4 cm. above the posterior commissure.

A review of the results of these twelve operations enables us to draw the following conclusions:

First. Of twelve cases of kolpo-perineoplasty, nine, when examined from one to four years after the operation, were found to be completely cured of prolapsus uteri with all its distressing symptoms, and this, too, while continuing to live under the same circumstances as before the operation. The other three cases showed a less favorable result in so far, as, when examined one and one-half, two, and five years respectively after the operation, they experienced a sensation as though the uterus had a tendency to protrude again. Even in these cases, however, the general health and condition of the patients was greatly improved, and in no case did the uterus actually descend to the vulva. Such results are very encouraging, and quite as good as those yielded by Simon's posterior kolporhaphy. Engelhardt, who published statistics on kolporhaphy, reports fifteen cases which he found cured, when he examined them at least one year after the operation. He calls the cases "cured," since the uterus was prevented from protruding from the introitus vaginæ; but he fails to give us more exact information as to the position of the uterus and the general health of the patient. For the same reason we might call *all* our twelve cases cured, since in no case did the cervix reappear in the mouth of the vagina. If any preference should, therefore, be awarded to

Engelhardt's statistics, it could be done only because he had fifteen cases at his disposal, we but twelve.

Second. For the partial success obtained in cases II., VII., and X., we must blame not only the severe exertions (threshing) to which the patients were subjected, in consequence of their menial condition, but also an abuse of sexual intercourse, to which, according to their own confessions, they were exposed by their husbands.

Third. Cases I., II., IV., VIII. and IX. show the correctness of the assertion that Bischoff's kolpo-perineoplasty in no way interferes with conception. The only accident which might naturally be anticipated during confinement is rupture of the perineum—an occurrence, however, not to be feared if the patient be directed to secure the attendance of a competent physician during labor.

Fourth. Cases IV., VIII. and IX. are further noticeable in that the good effects of kolpo-perineoplasty continued after confinement, which I am induced to attribute chiefly to the fact that these patients came for delivery to the hospital, where they were properly looked after for several weeks after confinement. I am confirmed in this opinion by the case of the fourth patient, who came in labor after the operation; she was confined at her home in extreme poverty, and afterwards proved a failure.

Fifth. Cases III., V., and VI. are evidences of the advantage of first amputating the hypertrophied cervix; while case IV. shows that prolapse of the anterior wall of the vagina is best dealt with by simply removing the redundant mucous membrane by means of elytrorhaphy.

Sixth. Special attention is called to Case XII. which was a very severe and complicated one, and therefore a valuable test of the efficiency of kolpo-perineoplasty.

Finally, a word should be said of the dangers incurred by the patient during kolpo-perineoplasty. Of 23 cases, one died of pyemia, which, as shown by the autopsy, resulted rather from the amputation of the cervix, which had been performed first. I should also state that this death occurred at a time when antiseptic principles were neither as fully recognized nor as thoroughly practised in our wards as is the case to-day, and that since then not one case was complicated by fever or failed to heal by first intention. The average time spent by the patients at the hospital was for these 23 cases, 45 days; I must add, however, that when no preparatory operation, such as elytrorhaphy or amputation of the cervix, is required, the patient may safely be discharged at the end of the third week.

Since the spring of 1875, when this operation was first described by me, kolpo-perineoplasty has been performed more than forty times by Prof. Bischoff, Dr. Egli, and myself. Not one case, that above mentioned excepted, proved fatal; union by first intention was the rule. I was informed, during the summer of 1876, that all the cases related in this paper (so far as they remained under observation) continued to do as well as when I saw them in 1875. The oftener we performed the operation, and the better we learned to adapt it to each case, by giving the flap the proper length and breadth, and by combining it with elytrorhaphy or amputation of the cervix, the more we became convinced of the correctness and practicability of the principles which suggested the operation. Kolpo-perineoplasty seems to me to be the most rational method hitherto devised, and its results far surpass those of any other operation.

OCTOBER, 1877.

KOLPO-CYSTOTOMY, OR ARTIFICIAL VESICO-VAGINAL FISTULA.[1]

BY

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I HAVE made, upon eight patients, twelve kolpo-cystotomy operations. Upon two of these women two operations were partially made with the actual cautery, and upon three others four were completely done with the heated platinum tips. The subjoined tabulated statement will give the dates, modes of operation, and results in the twelve efforts.

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[1] Read before the New York Obstetrical Society. Dec. 18th, 1877.

NUMBER.	DISEASE.	MODE OF OPERATION.	REPETITION OF OPERATION	RESULT.
I. Nov., 1866.	Concentric hypertrophy of the bladder, with endo-cystitis of six years' standing.	Division of vesico-vaginal septum an inch in length with scissors.	Four weeks later, on account of closure of the wound from vesical contracture, the scissors were again employed, and opening kept patulous by means of an india-rubber tube in and tied outside of urethra and fistula for six weeks.	Patient died eight months afterward of cholera; but apparently cured of the cystitis.
II. July, 1869.	Cystocele, complicated with gonorrheal endo-cystitis of two years' standing.	Elliptical exsection of vesico-vaginal septum, an inch in long diameter and about one-third of an inch in short diameter.	None.	Fistula closed by twelve silver wire sutures fifteen months afterward. Cured.
III. Jan., 1870.	Cystitis attendant upon stone, which was removed in Oct., 1869.	Reopened bladder in the site of the lithotomy wound, removing an elliptical section about the same as in No. II.	None.	Closed by ten silver sutures in July, 1871. The cystitis was cured, but the bladder paralyzed. After four months of treatment with galvanism and faradization, the patient was discharged well.
IV. May, 1873.	Cystitis of three years' duration, following suppurative pelvic cellulitis. In this case the bladder measured only 1⅞ inches from external meatus to fundus.	Incision three-quarters of an inch in length and glass button inserted. A division was attempted with the galvano-cautery instrument, but failed, as the apparatus did not heat the platinum tip.	Five weeks later the wound had almost closed, and the button had been tolerated but twelve days. Wound reopened and edges touched with red hot wire.	Fistula still existing, as the patient declines to have it closed, preferring the involuntary dribbling to a dreaded return of the agonies of cystitis should the wound be closed.
V. July, 1873.	Paralysis of bladder, with eccentric dilatation, granular and polypoid urethritis and endo cystitis of four years' standing, resulting from a protracted labor of fifty hours' duration.	Elliptical excision, as in Nos. II. and III., the urethra being well dilated and curetted at the same time to remove granulations and polypoid growths, which was repeated twice during the subsequent year.	Wound contracted to about one-fourth, and was reopened in six weeks. The edges were touched with a red-hot wire.	Closed in August, 1874, by nine silver sutures. Incontinence of urine ever since, during the menstrual period, otherwise is well.

VI. May, 1876.	Urethro-cystitis of fourteen months' standing, had been dilated eleven times. Urine occasionally very bloody from ulcerative processes around the urethro-vesical junction.	Vesico-vaginal septum divided by means of the galvano-cautery, about an inch in length. The tip was maintained as near a red heat as possible.	None.	For about eight months the bladder was well washed with carbolized water at 101°, and the fluid extract of pinus canadensis passed on a cottoned applicator into the urethra. No bloody urine after the operation. The wound was closed in July, 1877, with fourteen silver sutures. Patient still under observation and apparently cured.
VII. July, 1877.	Paralysis, with eccentric dilatation and granular endocystitis of more than a year's standing. The patient, however, had been for five years before subjected to occasional paralysis of the bladder, likewise she had had five attacks of cellulitis, and had been "Batteyized" for left ovarian neuralgia. She was a victim to morphine intoxication, and had been dilated in the urethra and washed out dozens of times. After two months of more than asylum discipline, the morphine habit was subdued.	Vesico-vaginal septum divided about ¾ of an inch by means of the galvano-cautery; tip a little beyond the red heat.	In two months, after the wound had healed and contracted somewhat, the patient thought the urine was not flowing as freely as at first. An examination, Oct. 20th, induced me to further enlarge it to its original dimensions, which was done with a Paquelin's thermo-cautère—the platinum tip at a red heat.	From July to Oct. 20th, 1877, she had gained twelve pounds in weight, and was enabled to walk about the house and drive out in good weather. She had been bedridden for eight months prior to the first operation. The morphine vice is broken. The bladder is still sensitive, and pains her considerably about the menstrual period. The improvement, however, is manifest, and she is freed from the agonizing catheterizations which had been made four times daily for nearly a year. The prognosis, as far as her bladder trouble is concerned, is favorable, but there is a persistence of neuralgia in the left periuterine spaces, notwithstanding the removal of the left ovary.
VIII. Oct., 1877.	Cystitis of eleven years' standing, with concentric hypertrophy of the bladder walls; syphilitic history.	About an inch of the vesico-vaginal septum divided by means of the Paquelin thermo-cautère; the platinum tip at a red heat only.	None.	Patient improved in general health and absolutely free from pain. The urine flows freely, and the lining membrane of the bladder not sensitive to touch.

Analysis of this series of cases, extending through a period of nearly twelve years, leads me to certain deductions in the treatment of cystitis proper, as well as disease of the urethra hitherto confounded with it. Dilatation of the urethra has of late been revived in the treatment of painful affections of the bladder, although Nélaton devised an instrument for such procedure, and insisted upon it in his cliniques as far back as 1854. This plan of treatment very naturally fell into disrepute because of the want of proper rules for the guidance of the surgeon in diagnosis. In cystitis proper, dilatation of the urethra is of no service whatever; on the contrary, it is harmful; whereas, in urethritis, and more particularly in urethral lesion about the meatus internus and around the vesical junction, nothing is equal to it in the rapidity of relief and permanence of cure, provided it has been well and persistently done. Quite a large number of cases that have come under my observation during the past twenty years justify this statement, although I must confess that in the first eight years I was frequently disappointed and baffled, because I had not learned to explore the cavity of the bladder by touch and to open the urethra sufficiently to expose the lining membrane to sight. In July, 1866, I saw a case in consultation with Dr. A. Kneckelhahn, of St. Louis, which was differentiated by urethral dilatation and exploration of the mucous membrane by sight and touch. In this instance a small glass speculum was introduced, through which we saw the condition of the lining membrane, and determined that the reflex spasm of the bladder and agonizing micturition depended upon urethro-meatus trouble, and that cystitis proper did not exist. This case induced me to study all bladder difficulties by direct physical exploration, consisting of vesico-vaginal, vesico-rectal, and hypogastric-vesical touch, as well as by sight, and for ten years I have taught such procedure to the various classes of medical students to whom I have lectured.

The etiology and symptomatology of urethral and cystic trouble are often confounded; but there are certain general symptoms in the history of these cases whereby one can approximatively differentiate them.

In Cystitis.	In Urethral Trouble.
There is always profound alteration in general nutrition, evidenced by loss of flesh, strength, and nervous tonicity, from want of sleep, pain and frequently kidney disease.	The general constitutional symptoms rarely reach that point of intensity to impair nutrition, and pain seldom amounts to very much except at the time of micturition. Kidney trouble is rare until the disease has become very chronic.
Rarely any discharge of mucus, pus or blood, save at micturition, when pain is frequently less intense.	There is most constantly a urethral discharge, greater or less in quantity, and pain is invariably increased on micturition.
The urine, most frequently acid and not fermented, is seldom mixed with the mucus of the bladder, is small in quantity, frequently voided, because the organ is so sensitive that it rebels against even a drachm of fluid. The constant dribbling from the ureters causes spasm, which begets concentric hypertrophy of the muscular coats, diminishing the calibre of the viscus, and determining greater thickness of the walls.	The urine is nearly always alkaline, particularly if the case be chronic, and the patient has learned to retain her water any length of time, a habit most of them fall into, which begets eccentric dilatation of the bladder walls; and sometimes the retained urine undergoes acid fermentation in a few cases, and an excess of urates is found, or, what is more frequent, the mucosities and muco-pus are decomposed, and the liquid is surcharged with ammoniacal deposits.
Usually follows severe puerperal affections, continued fevers, pelvic cellulitis, the presence of a stone, the pressure of a tumor or as a sequitur to urethral trouble, or in consequence of pressure from an anteverted uterus.	Is the result of specific disease, or in the greater number of cases is caused by a displacement of the uterus, dragging upon the bladder in retroversion, or dislocating it downwards in procidentia, or general pelvic sinking in lacerated perineum, principally in women whose connective tissue is flabby and flaccid, thereby impeding circulation.
	As a consequence, want of symmetrical distribution in the blood-vessels of supply and the veins of exit, as well as the mechanical changes in position (the bladder frequently sinking below the plane of the urethra), develop

blood stasis and the formation of hypertrophied papillæ. Submucous connective tissue changes, and other lesions rapidly ensue.

When the urethra is well dilated under an anesthetic, the bladder mucous membrane is seen to be hypertrophied, covered with granulations or fungosities of a bright-red color, or grayish in spots, or dotted with ragged ulcerations, the blood vessels are enlarged, the veins being tortuous, almost varicose, ecchymoses not unfrequently being found in the intervascular spaces, as well as hemorrhagic points where softening or ulceration exists. Vesico-vaginal or vesico-rectal touch reveals thickened walls, nodulated in spots, more particularly between and around the openings of the ureters. Bands of indurated and hypertrophied muscular fibres are not uncommon. The patient's pains are increased after the exploration, notwithstanding the urine may freely dribble away, the contractions of the bladder still going on every time any urine drops upon the hypersensitive mucous membrane; and the pressure of the finger and speculum invariably produces more or less of mechanical violence, which tends to aggravate her sufferings. The axes of the bladder are diminished, so much so that it frequently feels very much like a solid body. The probe, however, reveals the various longitudinal and lateral diameters, sometimes not more than an inch and a quarter in extent.

The dilatation of the urethra reveals papillary hypertrophy, erosion or ulceration upon its walls. Polypoid growths are frequently encountered, and at the meatus internus there is invariably much thickening and induration, both of the mucous membrane and the submucous connective tissue. The bladder mucous membrane is usually hyperemic, and rarely presents any other changes, unless the disease have been of very long duration. The patient's sufferings are mitigated after the exploration, as micturition is not called for, and the muscles of urine-expulsion are quiescent, in consequence of the forcible dilatation or a sundering of their attachments to the fasciæ. The longitudinal and lateral diameters are in the vast majority of cases increased, in consequence of the retention of urine, the patient dreading micturition and habituating herself to hold her water for a very long time.

With these facts before us, the question of treatment presents itself. In many cases we are not compelled to resort to extreme measures; in such as are dependent upon malposition of the uterus, lacerated perineum, or the pressure of tumors which can be lifted from the pelvic cavity. Not unfrequently an operation to close the perineum, a well-adjusted pessary, or a well-applied abdominal supporter will rectify malposition, or lift the superincumbent weight from the bladder, and the usual demulcent drinks and antilithic medication, co-added to hydrotherapeutic regimen, will in a few weeks or months restore the patient to a comfortable state of bladder-health. In such cases, the bromide of lithium in fifteen-grain doses, in an infusion of the triticum repens, given thrice daily, acts most satisfactorily, by rendering the urine bland and free from urates and oxalates. Should the bladder be not much thickened, and concentrically contracted, it may be filled twice or thrice daily with warm starch or linseed water, keeping the fluid in as long as the patient can tolerate it, which she does for a longer time after each application. By this proceeding we unfold the mucous membrane, and cleanse the rugosities of sedimentary mucus and urine deposits, and teach the bladder to expand under hydrostatic pressure, thereby facilitating healthy muscular action.

In certain other conditions determining cytitis from bladder dislocation (cystocele), we are not compelled to resort to kolpocystotomy, as a well performed exsection of the anterior wall of the vagina will retain the organ in place, and permit its complete evacuation. Here, too, warm emulcent douching is most valuable. The common practice of injecting alkalies for acid urine, and acids for alkaline urine, is not only not useful, but is frequently hurtful—all that is required is a thorough cleansing of the rugosities from the sedimentary deposits of retained decomposed urine. It is hardly proper to designate these conditions as cystitis proper, but rather as hypercinesis of the bladder, because the spasm is most frequently caused by reflex irritability, mucous membrane catarrh usually arising from abnormal position and the retention of decomposed urine and sedimentary deposits. Under certain circumstances even this condition cannot be cured unless the bladder is given absolute rest, as in Case II. above detailed. Many of the neuroses so closely simulate cystitis that a diagnosis can be made only after careful physical exploration—hence we should be very guarded in prognosis until we have determined if the symptoms be dependent upon organic change, or are simply indicative of changes in the sensory or motor system of nerves; cystitis being easier to cure than many of the neuroses, because physical causes are often factors in the pathology, and the ministration to a "mind diseased" is a baffling task. However, when cystitis proper is found to exist, there is but one remedy —years of experience, years of patient effort and years of futile results convince me that nothing will cure the patient save *long-continued and absolute bladder rest.* Kolpo-cystotomy, or the formation of an artificial vesico-vaginal fistula is the only remedy. The disagreeable alternative of one or two years of constant urine-dribbling has never been regretted by any patient on whom I have operated; and I have regretted more than once that I did not operate, instead of temporizing with mineral waters, local and constitutional anodynes, and the other methods usually prescribed. The quiescence of the bladder, the non-accumulation of urinary sediment, the freedom from pain, the sweet privilege of sleep, and the mental calm following division of vesico-vaginal septum for cystitis, soon improve our patient's condition, and she rapidly rebounds from debility and cachexia to the elasticity and buoyancy of health.

The main difficulty hitherto has been to keep the incison open after the use of the scissors or knife. Artificial means must be resorted to, such as an India-rubber tube passed from the urethra through the opening, which is annoying and painful, or a glass button introduced, which is difficult to retain, and when retained is apt to beget vesical tenesmus. I believe that the use of actual cautery at a *red heat* will be found to answer all purposes. If the platinum tip is at *white* heat, it cuts through too rapidly, and we are apt to have as much hemorrhage as with the knife or scissors. Hemorrhage is sometimes quite serious after incision ot the vesico-vaginal septum, particularly if the scissors or knife strike the tortuous enlarged veins, often ramifying upon or under the mucous membrane of the bladder.

If the platinum tip of the cautery be heated to a white heat, it cuts through as rapidly as the knife, and, therefore, the hemorrhage is likewise to be expected. Besides, the thin pellicle of slough following the white-heat tip soon peals off, and union might ensue. To avoid both bleeding and contraction, the *red-heat tip should be slowly passed along the site of the proposed opening, dividing first the mucous membrane of the vagina, and then resting for a moment or so to allow the adjacent vessels to contract and become thrombotic.* The submucous connective tissue is then burned, and afterwards the bladder wall itself. Extreme delicacy of manipulation is required upon the part of the surgeon, lest he burn directly into the cavity of the bladder, which should be avoided if he wants to make sure of result that will prevent hemorrhage, contraction, and subsequent union.

The cares after an operation of this kind consist in daily cleansing the bladder thoroughly with demulcent warm fluids, such as starch or flaxseed water. The pain in the bladder following the burning is comparatively slight, and usually subsides within thirty-six or forty-eight hours. Antilithics may be given or not, according to the judgment of the surgeon. My experience is, that they are usually unnecessary, as the kidney secretion soon gets healthy in quality and quantity, in consequence of the quiescence of the bladder-spasm and the absence of pain. Reflex irritability being absent, medication is not demanded. The deductions, then, of nearly twelve years of study of cystitis in the female are, that medication is useless in a vast majority of cases; that the disease is seldom ameliorated, and never cured unless we can obtain perfect freedom from spasm and contraction; that to obtain bladder-rest, is to keep it empty for months or years, and this can be only accomplished by the formation of an artificial vesico-vaginal fistula. The result is guaranteed by the use of the red-heat tip slowly passed into the bladder, and the best means yet devised to do this is by the Paquelin thermo-cautère.

REPORT OF TWO THOUSAND CASES OF DISEASE IN CHILDREN, TREATED AT THE DEMILT DISPENSARY, NEW YORK, WITH NOTES.

BY

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THE cases recorded below were all seen personally by me during a period of slightly over one year, the series of observations extending up to the 1st of December, 1877. At the Dispensary, cases of skin-disease and also surgical cases are, as a rule, excluded from the children's department; but a certain number of both these classes are from time to time treated in it. When this is the case, however, such patients are usually suffering from some disorder in addition, which would properly come under the care of the physician for diseases of children. In the list of diseases enumerated, there are considerably more than two thousand cases mentioned, but the series of observations embraces just two thousand patients; the apparent discrepancy being explained by the fact that many of the children, as would naturally be expected, were the subjects of more than one affection at the same time.

Abscess of breast....	1
" " buttock...	2
" cervical........	2
" inguinal.......	2
" of leg	1
" parotid........	1
" retro-pharyngeal.....	2
Adenitis, cervical......	15
Albuminuria seq. scarlatina..................	2
Anæmia	29
Anthrax......	1
Aphthæ	5
Ascarides............	313
Bronchitis...............	700
" chronic....	138
Broncho-pneumonia..	5
Burn......................	2
Cancrum oris..........	1
Catarrh, chronic nasal	18
Cellulitis, cervical and facial............	7
Cephalalgia............	10
Cholera infantum.....	15
" morbus.......	2
Chorea....................	3
Clitoris, irritation of.	1
Conjunctivitis	7
Constipation	8
Contusion of scalp....	1
" " side......	1
Convulsions............	2
Coryza.....	6
Croup, pseudo membranous...............	1
Croup, spasmodic	1
Diarrhœa, simple	187
Diphtheria.............	5
Dysentery..............	7
Dysuria	1
Eczema...	33
Empyema...............	1
Entero-colitis..........	80
Epispadias.............	1
Epistaxis.....	5
Erythema	2
" intertrigo...	6
Fever, intermittent..	14
Feverishness from dentition	14
Furuncles..............	22
Hæmatoma of scalp...	1
Hæmoptysis...........	1
Heart, valvular disease of................	3
Hernia	2
Herpes....	4
Hydrocephalus........	2
Icterus....................	10
Impetigo................	1
Impetigo contagiosa..	3

Indigestion	73
Leucorrhœa	1
Lichen simplex	1
Malnutrition	25
Meningitis, cerebro-spinal	1
Meningitis, tubercular	1
Mumps	3
Ophthalmia, tarsal	1
Otorrhœa	4
Paronychia	3
Pemphigus	3
Pertussis	62
Phthisis	2
Phtheiriasis	5
Pleurisy	5
Pleuro-pneumonia	2
Pneumonia	28
Pott's disease	4
Prolapse of rectum	4
Pulmonary consolidation, chronic	3
Rachitis	96
Rheumatism, articular	1
Rheumatism, muscular	1
Rubeola	2
Scald of arm	1
Scarlatina	9
Scrofulosis	23
Stomatitis, simple	15
Stomatitis follicular	21
" ulcero-membranous	3
Syphilis, congenital	14
Tænia solium	3
Tinea	5
Thrush	4
Tonsillitis	97
Tonsils, chronic enlargement of	12
Torticollis	1
Urine, incontinence of	5
Urticaria	15
Varicella	6
Vulvitis	7

In addition to the above cases, two children came under my notice at the Dispensary during the period mentioned, who were said by their parents to have been taking rather curious articles of diet. One of them, a little boy of four years, had swallowed a gun-cartridge, and the other, somewhat older, had swallowed two cents. As far as could be ascertained, neither of the children had passed these articles by the bowels at the time they were brought to me, and though in each instance a considerable period had elapsed after the accident, they did not seem to suffer any inconvenience in consequence of it. Cathartics were ordered in both cases; but neither of the patients was brought to the Dispenary a second time, and the final results are therefore unknown.

I propose now to take up the foregoing list alphabetically, and touch briefly upon such points in connection with some of the various cases as may seem to present the most of interest.

(1.) *Retro-pharyngeal Abscess.*—The first of the two cases of this affection occurred in an infant eleven months old which was brought to me one day when I arrived considerably later than usual at the Dispensary, and when there happened to be an exceptionally large attendance of patients in the children's department. I at once detected that there was very marked tumefaction about the fauces, which seemed to require the most prompt attention; but as I was so pressed for time, I did not pause to make any exploration with my finger or find out the exact nature of the trouble, but immediately sent the child to Dr. Charles McBurney, Surgeon to the Throat

Department, who was in the building at the time. On making an examination of the case, Dr. McBurney discovered that it was one of retro-pharyngeal abscess, and shortly afterwards made an incision with the bistoury, in my presence, and evacuated quite a large quantity of pus. It remained under his care afterwards, and did well.

The second case occurred in an infant of nine months, and as a complication of whooping-cough. The abscess discharged spontaneously while the child was being brought to the Dispensary; but from the description which the mother gave of the symptoms of the case, and the appearance of the fauces before this took place, as well as the condition of the parts which I found, on making a careful examination, there can be no reasonable doubt of the diagnosis. Dr. J. Lewis Smith, in his work on Diseases of Children, says that retro-pharyngeal abscess is more frequent in the first year of life than at any other period, and, whatever the cause, there is usually a scrofulous or reduced state of the system present.

The *London Medical Record* for Nov. 15th, 1876, contains an abstract of a very valuable paper on retro-pharyngeal abscess in children, published in the *Jahrbuch für Kinderheilkunde* by Dr. Bókai, directing physician to the Children's Hospital at Pesth, which is based on the observation of 144 cases. Of the whole number, 129 were idiopathic, 3 were due to the burrowing of cervical abscesses, 4 were secondary to vertebral disease, 7 occurred in the course of scarlatina, and 1 was the result of an impacted foreign body. The idiopathic cases are all believed to have originated in lymphadenitis. As many as 86 occurred in the first year, and 134 under four years of age. In an interesting article on the affection in adults, as well as in children, published in the *Ohio Medical and Surgical Journal* for October, 1877, Dr. John C. Peters states that, in a series of 67 cases observed, only 13 of the patients were under one year old, while no less than 41 were above fifteen years of age. Of the 58 cases tabulated by Dr. C. M. Allin, a somewhat larger proportion of cases occurred under the age of one year.

(2.) *Cervical Adenitis.*—In certain instances, the glandular trouble seemed plainly due to some local source of irritation, but, for the most part, it was associated with a scrofulous or otherwise cachectic condition. In some instances the careful use of mercurial ointment, almost always accompanied with the internal administration of tonic and alterant remedies, seemed to act quite happily. No attempt was made to reduce the size of chronically enlarged glands by the injection into their structure of acetic acid or tincture of iodine.

(3.) *Albuminuria following Scarlatina.*—Both the cases made recoveries, mainly under the use of appropriate tonics, as in each instance the general system was greatly reduced.

(4.) *Anæmia.*—Of course, there were a vastly larger number of patients than twenty-nine who were anæmic; but in these the anæmia seemed to be the principal or only trouble, while in the others it was merely one of the manifestations of some general constitutional condition, like rachitis or malaria. In two cases the anæmia appeared to be the result of repeated epistaxis, from which the children had been suffering for some time, and in another the debilitated state of the system (without appreciable disease of the lungs or other organs) gave rise to cold night-sweats of considerable severity. In the latter case the patient, a girl of six years, soon recovered her health and strength under a better hygienic regimen and the use of cod-liver oil and iron, with fifteen minims of tincture of belladonna at bed-time, in accordance with the teachings of Ringer and Fothergill. In an article on *Anhydrotics*, published in the *Practitioner* a little more than a year ago, Dr. Fothergill says: "The most potent of all anhydrotics, in my experience, is unquestionably belladonna. We are indebted to Dr. Sydney Ringer for our knowledge of this property of belladonna; and I have no hesitation in saying that the use of this agent completely changes the aspect of many cases of pulmonary phthisis. For the arrest of the exhausting night perspirations of phthisis, belladonna is as potent as digitalis is in giving tone to a feeble heart. . . . My experience of the use of belladonna in the treatment of hydrosis is not a very limited one, and it enables me to say that belladonna or atropine may be freely used without apprehensions as to any serious toxic effects appearing. It is not a treacherous drug by any means, and may be used with confidence."

(5.) *Anthrax.*—The carbuncle was situated on the breast, and occurred in a child three years of age.

(6.) *Ascarides.*—The fact that there was sufficient ground for making this diagnosis in 313 out of 2,000 cases, shows how very common among children is the presence of intestinal parasites. I must, therefore, beg leave to differ somewhat from Dr. J. Lewis Smith, who commences the article on this subject in his work on diseases of children in the following words: "The belief has been prevalent in the profession, and is now in the community, that the presence of worms in the intestines constitutes a frequent disease in early life. As the pathology of infancy and childhood, and especially the means of diagnosticating diseases, are better understood, this idea is gradually abandoned by the profession." In deciding this point, much depends on what is to be understood by the term *disease* in the above connection. It is no doubt true that intestinal worms are not very commonly the cause of any serious or dangerous illness, but that they do frequently constitute a source of most annoying irritation in the system, as well as interfere materially with the nutrition of young children, I am firmly convinced; and in this opinion I think I am supported by the testimony of a majority of the best observers in this field. It is true, however, that the diagnosis was not verified in a great many of the 313 cases, for the mothers of the little patients too often followed the example of the nine cleansed lepers in the New Testament, though always strictly charged to return and give the result of the treatment; but it was fully confirmed in a sufficient number of instances to show that I was usually right in attributing certain disturbances in the system to this cause. Not infrequently I have had mothers bring their children back, months afterward, for some other complaint, who would inform me that they had passed worms after taking the remedies ordered, and that subsequently they had been so well that they thought it was not worth while to return with them again. Any attentive observer who has much to do with children will soon become so familiar with the appearances and symptoms presented by those suffering from intestinal worms, that he will not be likely to make a mistake, even without resorting to the microscope for the purpose of discovering the presence of their ova in the feces. The symptoms of ascarides are succinctly given in the following manner by Heller, in Ziemssen's Cyclopedia. (The description refers particularly to *lumbrici*.

but is equally applicable to *oxyurides*, except that, when the latter are present, we have, in addition, the intolerable irritation about the anus, which renders them, "in spite of their small size, the very worst tormentors of man.") "Foremost among these phenomena we have itching of the nose, colic-like pains around the navel, boring and tearing pains in the abdomen, inflation of the region of the stomach, changeable appetite, and diarrhœa, with the expulsion of masses of mucous, which are occasionally tinged with blood. As external symptoms, we not infrequently see swelling of the face, darkening of the eyelids, unequal dilatation of the pupils, foul breath, and general wasting. Nervous symptoms, such as irregular pulse, unpleasant dreams, grinding the teeth during sleep, and starting out of it in a fright, with pains in the limbs, are all said to be caused by the presence of the worm. These symptoms are all very indefinite, and but little characteristic; still, when taken together, they are especially valuable, as not belonging to any other disease." To these signs I may add, a marked craving for bread in a certain proportion of cases, and nausea in a few instances. In one or two of my cases there was epistaxis, which was no doubt induced by the constant picking at the nose, and in two or three, convulsions, for which there seemed to be no other assignable cause than the nervous disturbances produced by the presence of the worms. The statement of Heller, that round and thread worms are even more frequent in adults than in children seems almost incredible, though apparently supported by the statistics which he gives. Certainly, if this is the case, they very rarely produce any symtoms all in the adult. No attempt was made in my observations to show the relative frequency of the lumbricoides and the vermicularis; but in a number of instances it was found that both varieties of ascarides were present in the same child.

As regards treatment, santonin has been my unfailing resource in both forms of worms, and the longer I employ it, the more implicit confidence do I place in it. My method is that adopted by the late Dr. John S. Parry (in whose service in the children's wards of the Philadelphia Hospital, I first saw santonin administered), viz.: to give one grain for every year of the child's age, though seldom increasing the dose beyond five grains. I am usually in the habit of ordering five powders made with an equal quantity of pulverized sugar, which may be placed dry upon the tongue, and which children swallow with the greatest avidity. Of these, one is to be taken every night and morning until all are gone, when a dose of castor-oil or other simple purgative is given. Heller recommends it in doses of from one-third to one and a half grains, the latter dose, only to a grow-up person; but these, I think, are too small to get the full effect of the drug, and he himself acknowledges that, except in large doses, it is quite innocuous. I remember one case in which I ordered it in four or five grain doses, when the German druggist, to whom the prescription was taken, brought it back to me in great consternation, fearing that I had made some frightful mistake, and that the child would surely be killed if it took the medicine.

I am aware that castor-oil is said to dissolve santonin, and that objections have therefore been raised against it as a purgative when this is given; but personally I have always found it to act in the happiest manner. In a paper on the use of santonin, in the *Medical Times and Gazette* for July 7th, 1877, Mr. E. Marlett Boddy says that, "if it is allowed to remain in the system, it acts deleteriously, like certain cumulative medicines. According to Falch, of Marburg, if santonin is allowed to remain in the system, we get a substance called xanthopsin, into which santonin is supposed to be transformed under certain circumstances which are at present not well ascertained. This xanthopsin is excreted by the urine, giving it a remarkable yellow color, causing a similitude to that secretion passed in jaundice, and its presence there is easily detected by caustic alkalies, which redden the urine. No doubt it is this xanthopsin which gives rise to those dangerous symptoms that have been so largely dilated on of late, and which many attribute to santonin only, forgetting or ignoring the presence of xanthopsin; and the only way to obviate this pernicious after-action is to combine it with some purgative, such as calomel, which carries it off." He then continues: "I myself have never had a case where convulsions or retention of urine have originated from santonin; in fact, I have never seen any untoward symptom resulting from it in any way whatever, which I attribute to my combining it with calomel, or preceding and following it up by that purgative." Now, with all due deference to Mr.

Boddy's opinion, I may state that, during the last few years, I have prescribed santonin in many hundreds of children's cases (perhaps two thousand altogether), and have also never seen any untoward symptom resulting from it in any way whatever; though I have seldom given calomel in connection with it. The only thing that I have found at all likely to give alarm is the discoloration of the urine, and I therefore always warn the mothers that this is likely to occur, and that it will pass off as soon as the medicine is discontinued. In some cases where the urine is strongly alkaline, it becomes of a blood-red color.

It seems to me reasonable to believe that the santonin will reach the intestinal parasite much more efficiently when it is allowed to remain for a short time in the system than when it is immediately carried off by an active purgative, given at the same time, and since it is found that no real evil ensues, this is the course that should ordinarily be adopted. The only instance in which I have known the drug to produce any unfavorable symptom was in the case of an adult in private practice, in whom ten-grain doses produced a little temporary nausea and vomiting. According to the *London Medical Record* for June 15th, 1877, poisoning by santonin is very rare. The following were the symptoms in the case of a child aged twenty-five months, described by Binz and Becker: There were left external strabismus, twitchings of the angle of the mouth, eyes and eyelids, dilatation of the pupils, especially the left; after some minutes clonic cramps of the left upper extremity, beginning in the fingers, and loss of voice; after fifteen minutes tonic cramps of the left eye and arm, followed by general convulsions. From time to time, there were short intervals of freedom from the cramps. Later on, spasmodic contractions of the thorac'c and abdominal muscles set in, with marked slowing of the respiration, accompanied by stridor, but the heart's action remained strong, and the pulse was almost natural. After lasting five hours, the cramps disappeared, but reappeared to a less extent, with diminishing severity, for the following three days. All this time the urine was intensely greenish-yellow colored. In Ziemssen's *Handbuch*, the treatment laid down is alcohol, artificial respiration, friction of the skin, warm baths, and cold applications to the head. Of these, artificial respiration is the only treatment Binz found of any value. He tried also amyl-nitrite, morphia, chloral-hydrate, chloroform, and ether, but only the last three proved of service. Ether he recommends to be given to overcome the cramps, and at the same time chloral-hydrate, which acts more slowly as an antidote, but with more permanent benefit.

In the case of thread-worms, Heller is of the opinion that santonin is of very little use, because he thinks it is mostly absorbed in the small intestine; but practically I have found it of the greatest service in getting rid of them. I cannot but believe that a considerable portion of the santonin, if it is given in sufficient doses, reaches the large intestine, and if it be true, as he states, that these parasites inhabit the cœcum, it seems to me that they must get a pretty good taste of it there.[1]

When I suspect the presence of oxyurides, however, I am commonly in the habit of ordering enemata of lime-water, as well as the santonin internally, and in quite a number of instances permanent relief seemed to follow local treatment by the rectum alone. J. Lewis Smith would have us adopt the rule not to give anthelmintics unless the patient has passed one or more worms, or their ova have been found in the feces; but I regard this as too narrow a one, seeing that we have at our command an agent so safe and efficient as santonin. Of course, I would never think of giving anthelmintics in a case where there were serious symptoms dependent on some other trouble (and the same would hold true even if there were proof positive of the presence of worms); but if there is no contra-indication, I think it is our duty to order them in every instance where there is good reason to suspect their presence.

(7.) *Bronchitis.*—On account of their delicacy of organization and their peculiar susceptibility to the effects of meteorological changes, to say nothing of the subject of improper clothing, bronchial catarrh must ever constitute the most common affection to which young children are liable. Diarrhœal diseases are confined almost entirely to the warm months; but bronchial catarrhs, though, of course, most frequent in the winter, prevail to a greater or less extent throughout the year.

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[1] In one case where santonin alone had been ordered, the mother came back and reported that the child had "passed the full of a wash-basin of little worms after the medicine."

I have nothing new to offer on this subject, but will merely say that in the early stages of acute bronchitis I have found tincture of aconite and muriate of ammonia of very great service, and that the old-fashioned brown mixture (usually combined with one or more appropriate expectorants) has proved of the most universal application of any remedy that I have employed. In chronic bronchitis, cod-liver oil, either alone or in combination, has been my great stand-by. Where the cough is very annoying at night, chloral often acts in the happiest manner. There were a few cases of capillary bronchitis, but none accompanied by pulmonary collapse, or of very alarming seriousness.

(8.) *Broncho-pneumonia.*—In the pneumonias of children, as is well known, there is almost always a bronchial element; but in the five cases indicated this was especially prominent.

(9.) *Cancrum Oris.*—This case, which was a severe one of gangrene of the mouth, was transferred to the Department of Surgery for local treatment. The result is unknown.

(10.) *Cervical and facial Cellulitis.*—In a number of instances this seemed to be attributable to the eruption of back teeth.

(11.) *Cephalalgia.* — This usually occurred in children (mostly girls) nine or ten years of age, and was commonly associated with constipation, though in some instances no assignable cause could be found for it, except a depreciated condition of the general system, or a neurotic diathesis. Pain in the side is also very frequent in such cases.

(12.) *Cholera Infantum.*—In the treatment of this dangerous affection, the most rigid attention to diet (at first allowing no food whatever to be given), and the early and free use of stimulus I have found to be the most important points. I have sometimes ordered as much as a teaspoonful of brandy (though not to be given all at once) every hour until the system rallied, if it could be borne by the stomach. To allay vomiting both in cholera infantum and ordinary infantile diarrhœa, I sometimes resort to wine of ipecac in drop doses repeated every hour, as recommended by my friend Dr. S. Henry Dessau. J. Lewis Smith employs $\frac{1}{10}$ to $\frac{1}{6}$ of a drop of the tincture; but it seems to me that such doses are too small to have any appreciable effect.

(13.) *Chorea.*—In one case, the affection seemed to be a sequela of whooping-cough (the child being in a very debilitated state), and rapidly improved under the use of cod-liver oil and iron, together with appropriate hygienic measures. The other two cases, in one of which the movements were much more marked on the left side of the body than on the right, did well under increasing doses of Fowler's solution.

(14.) *Irritation of Clitoris.*—This occurred in a child two years old, and was due to a very large accumulation of smegma in the folds of the labia minora surrounding the clitoris. The attention of the mother was called to the genitals on account of the great difficulty which the little girl had in passing her urine, micturition being quite scanty and evidently very painful. Without much difficulty I succeeded in squeezing out the mass, which was of the size of a large pea, white, and quite firm in consistency; after which the child had no further trouble.

(15.) *Constipation.*—Of course, there were a very much larger number of patients than eight suffering from constipation, but in the eight cases recorded under this head, it seemed to be the only difficulty present. In the constipation of young infants, I have found the use of oat-meal, suggested to me by my friend Dr. B. F. Dawson, frequently of service; but sometimes it has entirely failed to relieve it. Where I have found it necessary to resort to the use of drugs, podophyllin in small and repeated doses has been quite a favorite one with me.

(16.) *Convulsions.*—The two cases both occurred in rachitical children, and seemed to be due, as far as could be made out, to the irritation of dentition.

(17.) *Coryza.*—In the six cases of this affection here noted, it was not connected with bronchial catarrh at the time they were seen, though doubtless it afterwards occurred in many of them. The cases of syphilitic coryza are not included in the number.

(18.) *Croup.*—Only two cases of croup have occurred in my service during the past year. One was a case of spasmodic, and the other of pseudo-membranous laryngitis. The latter occurred in a child of three years. There was none ot the asthenia of diphtheria present when I saw the case, but I thought it well to pursue a supporting plan of treatment, with the exception of occasional emesis by means of turpeth mineral. The remedies ordered were a mixture containing chlorate of potassa, glycerin, and tincture of the chloride of iron, to be given every hour, turpeth mineral whenever the dyspnœa became marked, and the constant inhalation of steam. I gave instructions that the child should not be brought out again, but that the visiting physician should be sent for, if it became any worse; and afterwards ascertained from the mother that it made a good recovery.

(19.) *Simple Diarrhœa.*—I have here adopted the nomenclature of Meigs and Pepper: "We shall then describe Simple Diarrhœa, in which we suppose the intestinal disease to be either merely functional or one of slight catarrhal inflammation of the mucous membrane. Next, under the title of Entero-Colitis, or Inflammatory Diarrhœa, we shall treat of that form of diarrhœa which is now by many writers styled acute or chronic catarrh of the intestinal mucous membrane, and the chronic forms of which we believe to be of the same nature as the disease designated by most of the observers, whose experience was gathered in 'the vast field of the late war,' as chronic diarrhœa." I do not make use of the term gastro-intestinal catarrh for the reason that, as J. Lewis Smith says, in many of the cases so named no evidence of catarrh of the gastric mucous membrane whatever has been found after death, when the opportunity has been afforded for making an autopsy. It will be seen that the proportion of diarrhœal diseases, (including cholera infantum, simple diarrhœa and entero-colitis) is very small for the two thousand cases, but this fact is due to two circumstances: (1) During a portion of the hottest part of the summer, when these affections are most prevalent, I was absent from the city, my place at the dispensary being filled by a substitute, whose cases are not given in this report. (2) During the summer months the attendance in the Children's Department was much larger on the days when my colleague held his clinique (Mondays, Wednesdays, and Fridays), for the reason that they came immediately before the days when the excursions of the St. John's Guild Floating Hospital were made (Tuesdays, Thursdays, and Saturdays). There can be no doubt that the attendance, during the summers of both 1876 and 1877, was very markedly increased on account of the giving out of tickets at the Dispensary for these excursions. In 1876 there were treated in the Children's Department 701 patients in July, and 449 in August; and in 1877, 850 in July, and 630 in August; while in 1875 (when the floating hospital was first started and made but few excursions), 339 patients were treated in July, and 302 in August. For several years preceding that, the attendance was even smaller.

It is manifestly impossible for me, in the limits of a report like this, to enter into the subject of the causes of the summer diarrhœas of children, but I cannot refrain from giving my cordial assent to the opinion of Dr. Dawson that "the majority of the cases of gastro-intestinal diseases are the immediate or subsequent results of faulty alimentation, chiefly through a prevailing ignorance as to the proper requirements of the infant's stomach."[1]

Whatever may be the degree of temperature, the dryness or humidity of the atmosphere, the hygienic surroundings or the state of dentition, I am fully convinced that improper alimentation will almost invariably be found to be a most important factor in the causation of such disorders. It is true that, without these concomitant circumstances, this might not, in many instances, owing to the strong constitutions of the children, produce such a result; yet, combined with excessive heat, and the utter disregard of all hygienic laws found in our tenement houses, it forms the most prolific cause of the excessive infant mortality which is annually observed during the summer months.

It is self-evident, therefore (the above facts being conceded), that, if our treatment of such affections is to be at all successful, we must direct our attention especially to the diet of our little patient, and the hygienic conditions by which it is surrounded. In regard to the latter, however, it is too often the case, alas!, that almost nothing can be done, owing to the character of the wretched tenement-house system which has so long disgraced New York. If, then, any plan can be devised by which the child can be taken away, if even for a brief period, from the unwholesome quarters where its family resides, it will often prove of very great service; and hence I am of the opinion that the excursions of the St. John's Guild Floating Hospital[1] really accomplish a most excellent purpose, and that, if children suffering from summer diarrhœa can thus be taken out on the water two or three times a week, lives can sometimes be saved thereby which would otherwise be sacrificed. Of course, the benefits arising from such a change of air would be infinitely greater if the children could be kept away from their wretched homes until completely restored to health; but until some means shall be adopted for doing this on a large scale, the floating hospital excursions are certainly a great deal better than nothing at all of the kind.

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[1] Alimentation and the Gastro-intestinal Disorders of Infants and Young Children, by B. F. Dawson, M.D. AMERICAN JOURNAL OF OBSTETRICS for August, 1875.

Conclusion in the next number.

PREGNANCY WITH ALBUMINURIC AMAUROSIS.

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I WAS called June 16th, 1877, to see Mrs. S——, of this village, with the view of having charge of her approaching confinement, and received the following previous history:

About the first of May, 1876, Mrs. S. came up to Lebanon from Cincinnati, and at that time supposed herself to be about seven months advanced in her first pregnancy. She had suffered very much from headache during the period of her pregnancy thus far. On May 7th, headache was so severe that medical advice was had. On the 9th, fell out of bed in a state of partial unconsciousness (probably an epileptic seizure. Up to this time had not *appreciated* any loss of vision, but remembers she was a little nearsighted in using the needle: but *loss of vision was nearly complete immediately* after the fall. About the 17th May, Prof. Reamy, of Cincinnati, was called in consultation. Mrs. S. was very stupid, and on test, the urine was found abundant in albumen. About the 25th, she was confined of a dead and partially decomposed fetus. Prof. E. Williams, of Cincinnati, made an ophthalmoscopic examination of the eyes some time during July, and subsequently she continued under the general supervision of Prof. Reamy for several months. About the last of July, vision began to return (two months), and by September she could distinguish sufficiently to go about and pursue her ordinary household pursuits. During all the time of the imperfect vision, there was also a distorted expression of the eyes, the strabismus continuing for a long time. Also, while the improvement of vision was steady but gradual, after the miscarriage in May, yet there was at no time a *complete* restoration of the sight to its normal condition, though Prof. Reamy reports the urine as having become entirely free from albumen, and the general condition of health had become excellent.

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[1] A condensed account of the history and operations of this charity by Dr. F. C. Valentine will be found in the *Hospital Gazette* for September, 1877.

Jan. 1st, 1877.—Is again pregnant, the last catamenia appearing during December previous.

May.—About the last or latter part of this month, vision again begins to be imperfect, and from this time on, the dimness of vision becomes more and more marked.

Such was the condition of things, previous and present, when I was called, June 16th.

For some days she has had a great deal of headache; is "nervous;" sleep irregular. Directed bromide of potash grs. xv. every four hours, with good effect in relieving the headache and restlessness. On examination, find the urine excessively loaded with albumen, and on inquiry, the patient is very hearty in her diet—uses meat at nearly every meal, and coffee two or three times a day. Directed to restrict the animal food and coffee to once a day, and, so far as comfortable, to adopt a "milk diet."

To continue the bromide of potash, and to have tinct. ferri chlor. gtts. xv. ter die.

June 21st.—Free from headache, rests better, apparently doing well; reports the motions of the child as distinct; urine in good quantity, but still abundantly albuminous; vision stationary—sufficient to enable her to go about and attend to ordinary pursuits, and in all respects there was no material change until

July 8th.—I find her again suffering from headache, vertigo, increased dimness of vision. The bromide fails to-day to relieve these symptoms.

July 9th.—Appears better; has rested some; but there is a good deal of headache still, and vertigo.

Venesection to the extent of f oz. xxv., which promptly relieves the headache and disturbed sensorial faculties; expresses herself as "very comfortable." Nevertheless, during the day, there was a rapid further impairment of vision. At the time of the bleeding, in the morning, she could still distinguish ordinary objects, as the features of a house with its front portico, on the opposite side of the street; but very soon the upper part of the house and portico became lost in mist, and within a few hours she could not distinguish any part of the building, vision disappearing as by a sort of downward wave, or the drop of a dark curtain.

July 14th.—Is entirely blind.

July 15th.—Heavy and stupid, and disposed to be partially delirious. Has at times severe attacks of pain in the stomach, which appears to be neuralgic, as there is no disturbance of digestion; pain relieved by subnitr. of bismuth, but returns at frequent intervals.

Aug. 2d.—Confined of a dead fetus, apparently about six months developed, and considerably decomposed.

Nov. 1st.—There has been nothing very noteworthy in the further history of this case. During her "getting up" she continued to have neuralgic pains at times; these pains not confined to any particular region. She has pain in the region of the kidneys much of the time, for which I have directed dry cups with good effect. Prickling, numbness, and slight paralytic sensations of right limb complained of at times. The urine continues albuminous, though not by any means so abundantly as before confinement. Still, at this date, *Nov. 1st*, the usual tests show a decided flocculent appearance. The vision is not improved. She is still (now three months) entirely blind.

Jan. 25th, 1878.—Saw Mrs. S. Urine this day: sp. g. 1015—acid—and shows about 10 per cent of albumen. Health good in all respects, but there is as yet no improvement of the vision. It is now nearly six months since delivery.

Remarks.—It is fair to say that at the present time we have no obstetric inquiry of greater interest than a study of the relations which exist between pregnancy and albuminuria. We have had many suggestive contributions to this inquiry during the past thirty years; but still we are unsettled in many of our most important points, both of pathology and therapeutics.

The relations of this subject to the pathology of the kidneys have been well developed by M. Rayer. The peculiar relations to obstetric pathology have been sufficiently expressed in the memoirs of Braun, Goubeyre, Frerichs, Simpson, and others.

"And still, while albuminuria has been recognized by these observers as an important factor in puerperal disturbances, its influence has been chiefly confined to the production of eclampsia, or as a reason for inertia of the uterus, suggesting hemorrhage. But I think Cazeaux has very well said, 'It may possibly be shown in the future that albuminuria is a *central point* towards which converge a multitude of diseases of various characters, and these researches may throw light upon *their treatment*, which is still obscure.'"

Hitherto our attention has been but casually called to the relation of albuminuria to amaurosis, as especially peculiar to the albuminuric pregnant condition. It is true that Dr. Bright showed that, in certain cases of organic lesion of the kidneys, we had amaurosis as one of the results; but no practical obstetric deduction was made of this fact. Indeed, so far as I know, Simpson is the only writer who has made amaurosis a prominent probability of the presence of albumen in the urine of the pregnant woman. In one of his papers he has reported quite a number of cases in illustration of this possible result, and I shall draw from some of them before I close these remarks.

1. *What, then, does albumen in the urine mean?* Albumen does not appear in healthy urine; it does not appear in the urine of the healthy pregnant woman; what then has happened?

So good an authority as Dr. C. J. B. Williams contents himself with saying that albumen in the urine means "congested kidney," and very many credible authorities have so far assented to this expression that, in a study of this question, our thoughts have been chiefly directed to congestion or other lesion of the kidney as the constant factor in albuminuria.

The physical condition of the woman in her first pregnancy, as compared with second or subsequent pregnancies, favors the idea of a congested kidney, as the result of pressure on the renal veins by the developing fœtus. The correlative fact that albuminuria *usually* appears in first, and not in subsequent pregnancies, tends to enforce this idea.

But there are some other facts pretty well established. Congestion, even organic lesion, is not always associated with albuminuria; while, on the other hand, we have various pathological conditions producing albuminuria which are but temporary—as the albuminuria of cholera, of scarlatina, and of typhoid fever. So, too, in pregnancy, the completion of labor, either complete or premature, brings in most cases rapid relief of pathological symptoms, and a disappearance of the presence of albumen. Indeed, we have post-mortem observations of eclampsia with albuminuria, and yet no lesion whatever of the kidney.

So, then, is there anything behind the kidney of which we ought to make inquiry? We are apt to suppose that this organ is exclusively intrusted with the office of urinary secretion. But M. Pidoux very well observed, a long time ago, that the secretion of the urine is not confined to the kidney, since it takes place previous to the formation of that organ. The blood which flows to the kidney is already charged with the elements of urine which are to be separated from it in the passage. So M. Pidoux seems right in saying that the secretion of the urine is at once a local and general function; general, because it commences everywhere, and local, because it ends in the kidneys. [Cazeaux, Am. Ed., 1863, p. 283.]

It would seem, therefore, that in our inquiry we may have regard to the condition of the kidney, and also to the condition of the blood, and any circumstances that may influence this condition, or the elements contained in that fluid.

For example, if we find albumen in the urine, what may we find in the blood that is unusual? It appears very well settled that *urea* makes its appearance in the blood very much in proportion as albumen is found in the urine. The question then arises, if this change is sufficient to account for the toxic symptoms which are apt to appear in these cases? Urea is pronounced a poison by various authorities, and sufficiently so to account for all the disturbances of the brain and nervous system that we observe. But others insist that, of itself, urea is comparatively innocent, and that we must look for something else to explain these toxic conditions. A further decomposition of urea into carbonate of ammonia is suggested, and has been made the basis of certain therapeutic procedures.

Now, as I have said, this state of things, as to pathological changes, has been expressed by Williams as "congested kidney," and the tendency has been to refer these changes to the effect of pressure by the enlarged and enlarging uterine body with the progress of pregnancy. But I cannot but think this explanation very incomplete and unsatisfactory. The fact that albuminuria *usually* occurs in a first pregnancy, and *rarely* in later pregnancies, is suggestive; but I think we may see that it is suggestive of something else than *pressure*. The further fact that albumen is now known to appear within *the first few weeks* of pregnancy is still further suggestive. Cazeaux, in his excellent résumé of this subject [Am. Ed., 1863, p. 286], quotes M. Bach, of Strasburg, as saying "that he has seen it at six weeks in a very nervous person;" and yet I am surprised that he has made no practical deduction from this fact.

In the *Obstet. Journal of Gr. Britain and Ireland* for July, 1877, I find a case of puerperal eclampsia, reported by S. Thomas Oliver, of Preston, with remarks from which I quote liberally as follows; views that I believe are not only satisfactory, but not very well understood, or at least very well accepted. This explanation, it will be observed, recognizes the lively sympathies which are called out by the condition of pregnancy—especially, perhaps, in *first cases*—and patients of marked *nervous excitability*, even, I say, as we see from the very earliest days of impregnation.

Dr. Oliver says: "An explanation is necessary for those cases of albuminuria occurring in the second, third, and fourth months of pregnancy, in patients not the subjects of Bright's disease." Martin, an American writer, informs us that albuminuria occurring in the earliest months of pregnancy, in patients not the subjects of Bright's disease, is more common than has hitherto been supposed.

> He quotes the case of a healthy lady, who, when she passed a period or two, presented the symptoms of incipient uremic poisoning. There was no doubt as to the reality of her illness, nor was there any doubt as to the causal relation between the symptoms and the state of the kidney: for the urine, which was passed in large quantity, and had a specific gravity of 1.010, was found on examination to contain albumen, granular and hyaloid casts. A sound was introduced into the uterus to its fundus, and in ten days thereafter the albumen had almost entirely disappeared from the urine. Two days after the introduction of the sound, the symptoms had ceased, and the patient considered herself well, although the uterus did not empty itself until the twenty-first day. The observation in this case extended over three pregnancies, each attended by the same morbid and curative result—that is to say, albuminuria always appeared on the presence of pregnancy, and the symptoms almost immediately disappeared on the death of the ovum.

Now, in Martin's case, as the pregnancy never reached the fourth month, there could be no pressure from an enlarged uterus, nor can the idea of altered quality of the blood be for one moment entertained. There is still another cause, and this, though gained from the misty and uncertain region of speculation, and on that account not so physically true and mathematically clear in its explanation as pressure from an enlarged uterus, is sufficiently clear through its physiological connection as to be more than worthy of mere mention. Martin's observation verifies the connection of albuminuria with the early months of pregnancy; but it also shows us that it is totally independent of the mere size of the uterus and its contents. It shows us that *albuminuria arising in the earliest months of pregnancy is associated with a growing vitality of the ovum, and an increased functional activity of the uterus.* The fertilization of an ovum must be followed by an impression being made on that part of the nervous system which guides the process of nutrition, and the uterus cannot become enlarged and develop itself as to be a suitable home for its growing tenant, nor be the means of its expulsion on the attainment of its majority, without the acquisition of nutritive force. The great sympathetic nerve underlies all these actions, the first steps of which are accomplished by the vaso-motor supply. Practically speaking, we have a blood ready to furnish material, and all we want is a capillary circulation made ready to take it up—a step which can only be accomplished through the agency of the sympathetic nervous system. We know that the uterus is supplied with nerves from the spermatic plexus, and anatomy teaches us that the spermatic plexus is chiefly derived from the renal. "With this close anatomical relation (Martin), is there not a close physiological and pathological association? The impulse sent forth by the common nerve-centre over one set of nerves to one organ may sometimes react, and send a similar impulse through another set of nerves to another closely related organ. A sort of internal reflex action may in this way be propagated from the uterus to the kidney; or, to speak more plainly, in the early months of pregnancy, when the uterus is in a state of increased functional activity, there may be the propagation of an influence from it to the renal nerves, which, lasting for a time, stimulates or alters the interstitial circulation of the kidney as to produce albuminuria."

If these views, thus elaborated in the article by Dr. Oliver, are not as yet to be regarded as demonstrably complete, they still appear to me too plausible a suggestion to be overlooked in this discussion of what constitutes the incipiency of albuminuric conditions in pregnancy.

2. *What may happen?* But now, for the present putting aside this inquiry as to causes and changes, if we come to

ascertain the presence of albuminuria at any period of the progress of pregnancy, what may we reasonably anticipate as liable at any time to occur?

Sir J. Y. Simpson, to whom we are so largely indebted for investigations upon this, as other directions of obstetric inquiry, has put the whole in a nutshell. (*Simpson's Works; Am. Ed.*, 1871, 3 *volumes*, *Obstet. and Gyn.*, *p.* 296.)

1. "Albuminuria, when present during the latter months of pregnancy and labor, denotes a great and marked *tendency* to puerperal convulsions.

2. "Albuminuria in the pregnant and puerperal state sometimes gives rise to other and more anomalous derangements of the nervous system, without proceeding to convulsions; and I have especially observed states of local paralysis and neuralgia in the extremities, functional lesions of sight (*amaurosis, etc.*) and hearing; hemiplegia and paraplegia more or less fully developed.

3. "Edema of the face and hands, going on occasionally to general anasarca, is one of the frequent results of albuminuria in the pregnant female."

As corollary to these, Prof. Simpson makes also this noteworthy suggestion:

4. "The presence of this edema (3), or of any of the lesions of the nervous system (2), with or without the edema, should always make us suspect albuminuria."

By reference to the notes of my case, it will be seen that I had the following train of symptoms at times during its history:

Gradual, but eventually complete loss of vision; pupil widely dilated and immobile; neuralgia appearing in the stomach, face, arms, etc.; slight hemiplegia; vertigo, with stupor and delirium upon two distinct occasions. There has not at any time been edema of more than the slightest character, though for some days there was a decided sparsity of the urinary secretion.

3. *Probabilities.* With our present knowledge of the treatment of albuminuria in the pregnant female, the probability is that, in the *great majority* of cases, the fetus will be poisoned, and abortion or premature labor occur. So far as the mother is concerned, with our present resources, we ought

usually to be able to save her life; though, under the most favorable circumstances, the case is one of grave character. But when derangements of the nervous system remain after confinement, we have still important inquiries as to their degree of permanence.

Usually albumen disappears from the urine very soon after labor is completed, and at the same time a return to normal functional action. But, as in my own case, we may very properly be more anxious. This patient was having her second pregnancy. The disappearance of albumen previous to this pregnancy had been but for a brief period, and the loss of vision from the first pregnancy was as yet not completely restored. Hence, we may naturally suppose the kidney lesion to be of a more permanent character, and the associate amaurosis proportionally uncertain as to its disappearance.

Simpson, however (vide *Am. Ed. of Works, as ante, pp.* 300, 301), affords considerable encouragement in the cases which he has reported; thus:

"Case III.—It was the patient's second pregnancy. Her face had looked swelled for a day or two previously. During the night she complained of intense headache. In the morning she complained of such a degree of blindness that she could not distinctly see objects and persons. The urine was highly albuminous. She was freely bled. True labor pains supervened early in the forenoon. She was placed under the influence of chloroform for some hours, and delivered of a premature child, which was alive, but did not survive. The amaurosis in a great measure disappeared after the bleeding, and the patient's recovery after delivery was speedy and perfect, the albuminuria passing off within a week subsequent to her confinement."

"Case IV.—Patient, aged 36, is the mother of six children. In 1847, two days after the birth of her fifth child, she became totally blind in the course of a single night, the amaurosis being found complete when daylight came on. The blindness, however, gradually and entirely passed off in a few days. During the second week following the birth of her last child, in July, 1850, she again became suddenly and completely blind, with some accompanying symptoms of stupor and a very slow pulse. The amaurosis, however, has not entirely disappeared, as in the former attack. The patient's vision is still (Sept., 1851) so imperfect that she cannot read; her memory is extremely defective; she often forgets the proper word to use in the middle of a sentence: the iris now contracts, but for some time was dilated and immobile. The last child died of convulsions about a week after birth. The urine was discovered to be highly albuminous upon her first attack of amaurosis, and this state continues to be found in repeated examinations of it from time to time to the present."

Other cases are given by the distinguished author, but their features are so mainly similar that I need not weary you with their repetition. In a footnote, however, we find some quotations that are too important to omit from this résumé.

"Drs. Bright and Barlow observed amaurosis in four instances of albuminuria, but these cases were not connected with pregnancy. M. Landouzy states that he has seen thirteen cases of weakness of vision commence, cease, and reappear with albuminuria, and without any appreciable change in the eye or its appendages. And he considers some degree of amaurosis as a common complication with albuminuria. (See *Archives Générales de Médecine* for Nov., 1849, p. 370.) Hamilton and other authors incidentally mention amaurosis as a symptom connected with cases of convulsions. Dr. Ingleby has published a case in which a patient was affected with common puerperal convulsions in her first pregnancy; and in a subsequent accouchement was attacked with complete amaurosis, which continued during the whole period of her labor. Vision was gradually restored. See his *Facts and Cases in Obstetric Medicine*, p. 53."

4. *Treatment.* It must be confessed that thus far our views of the management of these cases is anything but satisfactory, the case of each one becoming for the physician a source of constant anxiety. Still there are some points upon which we are pretty well agreed:

In my own case, I gave bromide of potash to relieve headache and control the nervous excitement; cathartics and diuretics as additional means of elimination, in view of the perverted action of the kidneys. In reference to diuretics I notice that Simpson advises ol. juniper. It would seem reasonable that this drug might aggravate the already over-congested kidney. Hence, in my case, I used the acetate of potash, with the effect of securing a very abundant secretion. I put the patient on the steady use of the tinct. ferri chl., as a special restorative blood tonic, and finally I directed the "milk diet," in accordance with pretty well attested reports of the disappearance of dropsy and albuminuria in Bright's disease proper by this plan of diet. Dr. George Johnson, of King's College Hospital, London, has reported for the Lancet several very interesting cases bearing directly upon this point. (Vide *London Lancet*, March, 1877.)

In one or two respects I consider my treatment in fault: I bled the patient freely. The result was an immediate relief of the vertigo and threatened convulsions; but the amaurosis, which was still incomplete, became entire within a few hours after this abstraction of blood. Was this result accidental or to be expected? By reference to Dr. Simpson's case III., quoted above, it will be noted that the general features of the case were wonderfully similar; but as he says "she was freely bled," and the "amaurosis in a great measure disappeared after the bleeding." There was, however, this fault: had I been as positive of the death of the fetus as I should have been, premature labor might have been induced probably about the time of my first visit. I did examine for the sound of the fetal heart, and failed to find it; but my patient was all the time quite confident of the sensation of the true "motions." Hence, I felt anxious to prolong pregnancy, if possible, to a period of fetal viability.

But to return to this question of blood-letting. Cazeaux considers the condition of the albuminuric woman one of impoverished blood, and opposes therefore any further reduction of vital force by venesection. But on this point we have always had two strongly opposing views, and probably shall continue to have. There was read before the N. Y. County Medical Soc., Dec., 1870 (see *Am. Jour. Obstet., Feb.*, 1871), a paper on "Blood-letting as a Therapeutic Resource in Obstetric Medicine," by Prof. FORDYCE BARKER, M.D. The author thinks we have no agent so valuable in these very cases, and presents cases in illustration from his extensive practice. He even goes so far as to claim that "some of the most striking instances of its usefulness have occurred under my observation, where the patient was *extremely anemic*." And where the symptoms of uremic poising are well developed—the coma, convulsion, etc.—he says, "To bleed is to remove tension from the brain, to relieve congestion of lung and set the breathing free, to remove pressure from the laboring heart, and to ease the congested kidney of the load that embarrasses it. These are great points gained, but there is another greater: when we take away blood charged with the active narcotic poison, urea, we for the moment actually supplement the kidney, and do its office."

Frerichs' theory, that the urea which accumulates in the blood by fault of the kidney is decomposed into carbonate of ammonia, has been alluded to; and the practice of Simpson, of inhaling chloroform, as a purely scientific chemical agent, is familiar to all obstetrical students. Simpson, however, gave chloroform only as the remedy when albuminuric convulsions were present or threatening, believing that he thus established a temporary diabetes, which prevented for the time the decomposition of urea into carb. ammonia. If his theory and practice be correct for the convulsive emergency, why not employ *chloral* somewhat persistently in albuminuric states, and upon the same general chemical principles?

I have suggested that, had I been positive of the death of the fetus, I would have proposed to induce premature labor. It is proper still further to say that, in such cases as these, I presume it will be accepted as good practice to secure the induction of labor, as a rule, as early as there is a fair probability to expect the viability of the child; by this means affording to both, the largest probability of survival, as well as to arrest those processes maintaining the persistent supply of poisonous elements to maternal and fetal life.[1]

THE PRIMARY CONVERSION OF OCCIPITO-POSTERIOR INTO OCCIPITO-ANTERIOR POSITIONS OF THE VERTEX; WITH CASES ILLUSTRATING THE PRACTICE.

BY

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OCCIPITO-ANTERIOR positions of the vertex form the type of natural labor; as a rule, all others are converted into them, either spontaneously or artificially, before the termination of the labor. The exceptions to this are the small proportion of occipito-posterior positions, in which the occiput fails to rotate forward to the pubis. The latter have been estimated at about 4 per cent. Dr. Uvedale West, whose statistics are of frequent reference, reports "79 out 2,585 cases."[1] These exceptions, as such, partake more or less of the character of preternatural labor, although they generally terminate with safety to mother and child.

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[1] I did not have the privilege of reading Prof. Fordyce Barker's capital book on Puerperal Diseases, until after the foregoing paper was sent to press. In lecture V, the reader will find, not only a very clear outline of the general subject of puerperal albuminuria, but incidentally particular attention given to the liability to amaurosis, illustrated with cases. And although a favorable view is expressed as to the ultimate restoration of vision, suggestions as to the special therapeutics of albuminuria subsequent to delivery are not very satisfactory.

The important fact that I wish to emphasize in the outset is, that occipito-posterior positions of whatever kind ultimately become occipito-pubic, unless interrupted by some deviation in the mechanism. Nature, therefore, accepts the anterior position as a model, to which all vertex presentations must approximate as nearly as possible. All efforts of the profession tending to the uniform production of this position are therefore in the right direction—both natural and scientific. Ordinarily, the chief point of interest in the mechanism and management of occipito-posterior positions is the rotation of the occiput forward: it is the objective point, which, if attained naturally or otherwise, places the case upon the sure and safe footing of the highest type of natural labor. The period, however, at which this happy transition occurs is a remote one, namely, when at or upon the floor of the pelvis, the presenting part is under the necessity of acquiring the axis of the pelvic outlet for ultimate delivery; failing in this, the occiput must escape posteriorly.

The great majority of cases are so orderly in their progress, with or without the ordinary service rendered by the accoucheur in aid of rotation, that, notwithstanding the delay, suffering, shock, and instrumental possibilities incident to many of them, it has become established usage, crystallized into a firm clinical precept, to wait on them as positions so favorable as not to be interfered with, except in aid of the natural mechanism. Notwithstanding the weight of eminent authority that imposes its sanction on this course, I venture to suggest that a thoughtful consideration of the premises leads a step beyond or higher than this, namely, *to their primary conversion into anterior positions*, when practicable, to the supersession of their possible difficulties and irregularities. This must not be confounded with the rotation (much greater in these) that takes place late in the mechanism of all labors. It bears no analogy to it: it does not supersede it. *The conversion of an occipito-posterior position primarily, i. e., at a period prior to its actual engagement in the pelvis, into an occipito-anterior, is a radical procedure which affects the labor as a whole, not in a single particular, as does rotation in its ordinary signification and practice.* Rotation effects an ultimate and secondary change into pubic relations; while the other inaugurates this relation at the pelvic brim, whereby all of the advantages and immunities of anterior positions are secured.

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[1] Playfair, page 243.

It will be conceded that, as the latter are the safest and most natural, and into them the former are ultimately changed, it is reasonable to anticipate the best results from their primary or original conversion; and the earlier it can be harmlessly effected the better. Nature has imposed an ultimate change by means of an extensive rotation. Why not relieve this necessity and anticipate the latter, in the manner spoken of, at an initial period of the expulsive stage, and thereby avoid unnecessary expenditure of force by the uterus, shock and suffering to the mother, risk to the child, and other evils? Nature gives preponderance to occipito-anterior positions, and to whatever extent it becomes practicable for the profession to swell the proportion, it becomes a duty to perform it. Approached in this way, it does not appear altogether presumptuous or venturesome to attempt the primary conversion of one into the other.

Its practicability, in a fair proportion of cases, is not an undecided matter in my mind, as the subjoined cases show. I had been led, by difficulties attendant upon these faulty positions, carefully to observe the mechanical phenomena which characterized them, and nearly two years ago, when, annoyed by the failure of the head to advance in a R. O. P. position, where everything favored a rapid, easy delivery in a multipara, it occurred to me that, as the position was the seeming cause of the retardation, I might relieve this, and anticipate its failure to rotate in the pelvis, by converting it at once into a R. O. A. position. This was easily done in the manner hereafter detailed, and the labor terminated in 15 minutes; a delay of two hours having been indulged while waiting for the spontaneous progress of the case. Since then I have applied it to other similar cases with like results. On sundry occasions I have failed, the cases being left to their ordinary progress. Led by this experience, I have endeavored to ascertain whether it would not be proper to apply the manœuvre to *all posterior positions*, taking, of course, the risk of failure in a goodly number of cases where the conditions necessary to success are not furnished. It is to the presentation and determination of this principle of practice that I now direct attention. I ask, therefore, is it right and proper, as well as practicable. to convert (or attempt to do so) occipito-posterior into occipito-anterior positions at an early period of labor and irrespective of the rotation natural to their mechanism in the lower pelvic strait? Is it consistent with sound obstetric doctrine?

Anticipating objection to the adoption of this rule of management in what are usually regarded as favorable presentations, comprising, perhaps, 40 per cent of so-called *natural* labors, I have sought, by consulting works at my command, to get whatever light they afford on the subject. I had been taught to confine my efforts to promoting flexion, to supervising the rotation of the occiput at the usual period in these labors, with certain other directions as to rotating the head when embraced by the forceps at the superior strait.

Dr. Hodge alone, out of eleven authors consulted, approaches a formal enunciation of such a line of practice, and this is authority enough. He enjoins the duty of facilitating "*rotation anteriorly*" even at the superior strait, apparently in lieu of the rotation peculiar to their mechanism, rather than as a distinctive artificial proceeding, radically subversive of labor with that position. It is not simply causing the head to perform a movement of rotation sooner than the mechanism of such labors would prescribe its orderly occurrence; because when thus converted, rotation in the pelvis still occurs as a part of the mechanism of this as of all vertex presentations. As a distinctive artificial proceeding, it involves more than a mere rotation of the part, namely, a change in the type and character of the labor; a fact that confers higher dignity on it than is accorded to bringing the occiput forward as ordinarily understood. Confusion is created by referring to the latter as a mere *rotation anteriorly*, that I seek to relieve.

It is not certain that Dr. Hodge meant to apply this to *all* posterior positions, whether easy or difficult, although his remarks may be susceptible of that construction. In discussing the rotation of the occiput in these labors, he says: "This operation with the finger may be commenced even when the head is high up, as soon, at least, as the os uteri is dilated, for then the head is more movable, and, of course, rotation is effected more readily."[1] Again, "when the head in this fourth position is *at the superior strait*, the same general principles should guide us. We should attempt anterior rotation by means of the fingers in the first place; if not successful, then by means of the lever; after which, if necessary, the forceps may be applied, as usual, in the right occipito-anterior position" (p. 259). This clearly refers to difficult cases; hence our uncertainty whether he meant, in the general discussion of the rotation of the occiput, to apply the rule of "rotation anteriorly" to *all* occipito-posterior positions. However, what can be done under difficulties with safety, may be done more easily under ordinary circumstances.

Meigs, Dewees, Churchill, and Playfair confine attention solely to the discussion of rotation; Meigs, however, denying that rotation can be effected "in the early stages of labor, except by regulating the posture of the patient." I have not found any reference to this subject, except in connection with the use of the forceps above the brim. Barnes extends only a qualified assent to the propriety of attempting to rectify the position in posterior positions at any time. In regard to the rotation that I most approve, he says: "It is exceptionally useful; still more rarely is it necessary, and it is not free from danger. The head can be born very well, preserving the occipito-posterior position throughout." (Obstetric Operations, page 81.)

Cazeaux expresses himself thus: "We believe that where the process of rotation does not take place spontaneously, all efforts to produce it artificially would be useless, not to say injurious" (page 402, fifth American edition, 1872).

Leishman, while discussing the third and fourth positions, says: "Few things are more familiar to the experienced accoucheur than a rotary or rolling movement of the head, which he observes during a pain or an interval, while it is still high in the pelvis. This is due partly to uterine action, and partly to the movements of the fetus, and we have no doubt that, by this means, many unnatural and faulty positions are rectified even after labor has commenced; and we are further entitled to assume that in this way many occipito-posterior positions are rectified at such a stage that their detection is rendered impossible. It should always be remembered that the dorso or occipito-anterior position of the child is the natural one, and that, according to which, the irregular oval which it forms is most conveniently disposed."

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[1] Hodge's Obstetrics, p. 257.

Again, touching the rectification of these positions, he continues: "As regards the period of labor at which rectification may be effected, we find that many writers assume, or at least imply, that the operation may be performed at any stage. The fact is, however, that the head cannot in ordinary circumstances be rotated until it has reached that stage of the labor where nature, as a rule, spontaneously induces the rotation, so that it will often be a matter of difficulty to say what share in the management we are to award to nature, and what we may claim as the result of our operative interference. The conclusion with reference to the subject at which we have arrived is, that we may succeed in amending the position of the head in two classes of cases. In the first of these, the head is free at the brim, or at least has not as yet encountered any serious pelvic resistance; and here rotation may be effected by the forceps in a manner which will be more particularly attended to when we come to speak of the uses of that instrument. In the second class of cases referred to, the head has reached the floor of the pelvis, where we have natural rotary forces operating in our aid; but no attempt while the head is in a situation intermediate between these two, is likely to be attended with success" (page 310).

The first quotation from this author admits the possible spontaneous correction of occipito-posterior positions before engagement, the latter proposes their rectification "by the forceps," of course, in difficult cases alone, where, as is afterwards detailed, the use of the forceps became necessary for delivery. But all this is given after the formal declaration, that "the head cannot in ordinary circumstances be rotated, until it has reached that stage of the labor where nature as a rule spontaneously induces rotation," etc.; this virtually denies the practicability of the measure that I advocate, since it is to "ordinary" cases, with all their liabilities, that the principle applies. The fact is, more or less ambiguity attends the writings of this author on this point, since what he declares to be possible with the forceps in one place, he states cannot be done "in ordinary circumstances" in another. He does not state that he had thus rotated it, but concludes, upon reflection, that the position of the head at the brim may be amended "by the forceps." Now, what this author thought might be done with the latter, I have done without the forceps in ordinary cases and with ease; the propriety of which course receives the seal of approval and high sanction of the illustrious Hodge. In answer, therefore, to the question propounded, I must reply that it is not inconsistent with sound obstetric doctrine thus to amend an occipito-posterior position at an early stage of labor, and in all cases if possible.

But admitting its feasibility, it may be asked, Does the necessity for its adoption sufficiently appear? I will endeavor to establish this by a brief reference to the liabilities of these positions; premising it, however, with the remark, that, whatever their influence may be on the labor itself, or the subjects of the labor, if they can be mitigated in a sensible degree, to say nothing of their escape or removal, by a suggestion safe in itself and easy of performance, the latter must have precedence, even though it involve a change of position. Because these labors reach safe delivery notwithstanding their liabilities, furnishes no sufficient argument against that which tends to supersede and avert the latter by a simpler and more radical treatment.

The difficulties incident to these positions may arise at any stage of labor. However favorable other circumstances peculiar to the case, no certain prognosis as to its regular progress can be made, since, if the first stage has been completed in the most natural manner, the second may be attended with evils beyond our power to anticipate. This very uncertainty deprives them of the favor to be shown to such positions as inhibit all efforts at their primary correction. The above remark is fully substantiated by Dr. Meigs, who says: "Indeed, in some instances of labor, the head engages in this way even more rapidly and easily than in occipito-anterior positions, and the attendant, seeing the rapid progress of the head, is very liable to make a false prognosis, by promising an early delivery, in which he is egregiously disappointed in consequence of difficulties to be afterwards encountered."

They are a frequent cause of delay in the first stage as well from imperfect flexion, incident to the position alone, as from the necessity for a greater degree of dilatation for the passage of the head than in anterior positions. Meigs says: "When the vertex is to the front, it enters the os uteri favorably, and passes through that orifice with a circumference of 10½ inches, or a circle of 3½ inches diameter; but when in a posterior direction, the latter acquires a circumference of 12½ or 13 inches." This implies more work under disadvantages.

In the second stage, they encounter "a tedious process of rotation, double in extent to that demanded in a first or second position," "with a most violent flexion of the head where rotation fails" (Meigs, page 217). Retardation, from either of these causes, is suggestive of shock, exhaustion, and other serious evils to the mother, instrumental aid for the termination of the labor, and increased risk to the child.

The arraignment of these positions is so complete and so practical, in a paper by Prof. A. H. Smith, on "Retarded Dilatation of the Os Uteri in Labor,"[1] and will serve my purpose so usefully, that I shall present the following quotations therefrom, at the same time asking the reader to observe how apposite the suggestions I advocate would prove in their management.

"I come now to the last variety of this class of cases which I propose discussing, viz.: those in which the delay in dilatation results from an occipito-posterior position of the head, in otherwise normal labors, with heads not over and pelves not under ordinary size, and with the tissues not unnaturally rigid. These are, in my experience, the vastly most numerous cases of delayed dilatation; the ones most frequently mistaken for cases of rigidity: the ones most requiring careful management; the ones most satisfactory in their results, if fully understood. The occipito-posterior positions, especially in primiparæ, are the plague of the young obstetrician." "Suffice it to say now, that the relation of the fetus to the brim of the pelvis is such that the occiput, in consequence, firstly, of the obliquity of the uterus, and secondly, of the resistance of the elastic tissues of the child's neck, is carried firmly backward against the posterior wall of the uterus and the sacro-lumbar promontory, causing a presentation at the pelvic brim, not of the posterior fontanelle, but of the anterior extremity of the sagittal suture. For the head to enter the brim, as it must, with its occipito-mental axis coincident with the axis of the superior strait, the occiput must be drawn forward, that is, the chin must be flexed upon the thorax very forcibly, much more powerfully than in the anterior position in which the flexion is easily accomplished. Now it is the difficulty of completing this flexion and driving the flexed head into the brim and down into the excavation, and bringing it to impinge upon the os uteri, that is the cause of delay in the first stage of labor in a large majority of all occipito-posterior positions, and these cases occur with vastly greater frequency than those of disproportion in measurement, which I have just been considering. According to statistics they constitute nearly one-third of all cases and in my experience a larger proportion still.

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[1] Med. and Surg. Reporter. Aug. 11th and 18th, 1877.

The diagnosis being settled, what are the indications for treatment? If the membranes are intact, do nothing; neither mother nor child is in danger. After rupture, if the head does not descend, then interference becomes needful. The delay is from want of flexion, want of power in the uterus to bring the vertex to the centre of the strait. We must help the uterus; how shall we do it? We may sometimes, by placing the finger behind the occiput, draw it forwards. My eminent friend, Dr. Goodell, skilfully uses the vectis for this purpose. I prefer the forceps, because, if properly used, we have in them not only the means of promoting flexion, but also of aiding the uterus to fix the head in the excavation by traction upon it after it is fixed."

I quote the treatment here, as well to give the reader an adequate conception of the material nature of the difficulty from the hazardous instrumental resort advised, as for the opportunity of applying the treatment which this paper advocates. The true indication is to "help the uterus" by changing the position to an anterior one—often possible, sometimes impossible, like all other measures. It is this alone that nullifies the action of the uterus, to relieve which it is certainly more rational to substitute, if possible, a better position, than to force the adaptation of a faulty one by means of "forced flexion" with instruments.

You may even do something while the membranes are intact: by external pressure raise the uterus so as to overcome its obliquity as far as possible, and availing of the presence of the waters, even at the risk of their loss, with the finger (or fingers) on the temporal or latero-frontal region attempt the rotation of the occiput forward as in the first and second positions. Whatever gain in this direction is made, maintain by continued pressure till the pains come to your aid. Uterine action favors and ultimately fixes the conversion. Conversion secures flexion, dilatation, progress, safety, and averts happily the use of instruments which, in other than strictly skilful hands, are fraught with danger. The forceps, applied as above, are to produce necessary flexion, after which they must be removed, only to be reapplied later, should rotation fail or other occasion arise.

By this means the case is remanded from one of troublesome delay and hazard to the simplest and most favorable type of labor, with all the promise of security to mother and child that it affords. As much credit falls also to the accoucheur as to one who skilfully performs the more difficult and more dangerous feat of applying the forceps. It is true, I believe, that eminent obstetricians would fly the use of the forceps above the brim and before complete dilatation is effected. Only under emergencies not possibly met by other safe means would they feel impelled to their use. If bi-polar version, podalic and cephalic, can be performed to the exclusion of the older and severer method (which contemplates the introduction of the whole hand into the uterus, and an advanced degree of dilatation), at a time when two fingers only can find passage through the os, it is not easy to discern why this change of position should not be accomplished by similar means at a correspondingly early period, or as soon as the diagnosis is clearly possible. There are good reasons why it should not be prematurely done, particularly before the close of the first stage; but in those cases where the position alone is the cause of delay in this stage, they do not obtain.

That stale old reference to "meddlesome midwifery" and the nimia diligentia medicis forms no appropriate reminder here, as the suggestion is conservative in all its bearings and results. It is intended to save time and suffering in their widest signification. It occupies time given to delay, anxious waiting, etc., which may bring unmitigated evils instead of relief in their wake.

Under ordinary circumstances, the eligible moment for its execution is just at the close of the first stage, when, with the waters not yet escaped, material aid may be expected from their presence in favoring the rotation of the head. Often after rupture a sufficiency is still retained to render the change of position practicable. From close adaptation of the head to the pelvic brim, they are retained, "ponded up," as Barnes terms it, finding escape only at delivery or during the change of position. Rupture of the membranes does not, therefore, exclude it. Friction from direct engagement of the presenting part, or from close adaptation to the pelvic structure, is the great obstacle, and will sometimes cause failure. In others it is surprisingly easy, and often places a new aspect on the labor. The opportune moment is, as Leishman has expressed it, "before any serious pelvic resistance has been encountered."

The method that I have pursued is as follows: In the interval of pain, apply firmly one or more fingers to the latero-frontal or temporal region, then obliquely anterior, and pressing the forehead steadily to the right, if L. O. P., or to the left, if R. O. P., and backwards, maintain whatever gain is made during the succeeding pain or pains, and thus endeavor to rotate the occiput forwards, thereby converting the third into the second position, and the fourth into the first. External pressure may be employed also to fix the position after correction, by maintaining the pressure in the intervals till such advance occurs as secures it beyond a peradventure.

In case V., reported below, this was varied from; I passed the index finger between the right parietal bone and the cervix, directly back to the posterior fontanelle, and finding a purchase there, drew the occiput forward, at the same time flexing the head on the chest. External pressure fixed it until the succeeding pains, during the second of which I ruptured the membranes. A rapid descent with L. O A. position was thus secured—delivery occurred in thirty minutes after the correction was made.

The conclusions to which these considerations lead may be summarized, as follows:

1st. The *primary conversion* of occipito-posterior positions of the vertex into occipito-anterior is a wholesome obstetric expedient, altogether practicable in many cases.

2d. As it admits of resort, early in labor before the expulsive stage has fixed the position, and moreover promises and secures all the advantages of anterior over posterior positions, it is worthy of careful trial, whenever it becomes necessary to expedite delivery in such cases.

3d. In retarded dilatation of the os uteri from this cause, at as early a period as possible, this measure should be employed before "forced flexion" is attempted, even though the membranes be not ruptured, as the corrected position, even for dilating purposes, is to be preferred to the original position supplemented by "forced flexion" with forceps or other instrumental means.

4th. In ordinary cases, it deserves serious consideration, whether the correction of the position be not the first step proper to their management at or near the close of the first stage, this being the eligible moment for attempting it.

5th. Conceding its practicability in many cases, it becomes the duty of the profession, by careful observation, to determine its true value as an additional resource, strictly conservative, in the conduct of all occipito-posterior positions.

6th. Admitting the ultimate safety of occipito-posterior positions, no resource can be considered superfluous that promotes an increased ratio of occipito-anterior positions, for obvious reasons.

Case I.—Mrs. G. N., primipara, Oct., 1875. Vertex presentation, R. O. P. position, with tedious labor from the position; os uteri soft and dilatable. Waited till first stage was nearly completed, then changed it into a R. O. A. position and ruptured the membranes, whereupon labor progressed rapidly.

Case II.—Feb., 1876, Mrs. L. T. F., multipara. Second labor. Vertex presentation, R. O. P. position, tedious labor, pains ineffective, apparently from the position. First stage being nearly complete, waited two hours without material change. Ruptured the membranes and afterwards changed the position to R. O. A. Delivered in fifteen minutes.

Case III.—Sept., 1876, Mrs. B. P. J., multipara. Second labor. Vertex presentation, R. O. P. position. Not strictly a tedious labor, although its progress was retarded by the position. Near the close of first stage, changed the position to R. O. A., rupturing the membranes also; then progressed favorably to early delivery.

CASE IV.—Nov, 1877, Mrs. W. V. C., multipara. Second labor. Retarded by position, L. O. P. Converted into L. O. A. Membranes having been previously ruptured, delivered within an hour.

CASE V.—Dec. 16th, 1877, Mrs. B. J., multipara. Fourth labor. Retarded by L. O. P. position. Changed to L. O. A.; then ruptured membranes. Delivered in an hour.

NORMAL POSITION AND MOVEMENTS OF THE UNIMPREGNATED UTERUS.

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(With three woodcuts.)

A. *Summary of the evidence of authors.*

MOBILITY of the uterus is inseparable from a due performance of its functions. In this sense we may say that this normal and essential mobility is an endowment, the result of the peculiar method of suspension of the uterus by its ligaments and its cellular connection. Whatever position the organ may assume, presuming an antecedent normal development, is the direct outcome of these conditions.

A knowledge of the normal position and range of movements of the uterus is essential to a proper understanding of the pathological variations both of position and form. Having this great practical importance, we shall give a careful study to the subject.

Before entering upon an investigation of the anatomy of the organ and its supports, so far as they may bear upon this question, it will be instructive to examine the views of those who have studied the subject. Here we are met by the difficulties that always attend conflicting and irreconcilable testimony. Even the practical importance of this matter is regarded from two opposite points of view. Some authors look upon the uterus as having no relatively fixed position and consequently give it but slight importance (Cruveilhier, Aran); while others claim for the normal position great practical value, even when admitting the error of assigning the organ a mathematical certainty of position (Hueter).

Schultze refers much of the difference in opinion as to position of the uterus to the opposing points from which it is viewed by the anatomist and the gynecologist. It is undoubtedly true that, while we must resort to the dead subject for a study of the machinery of support, the actual position of the organ in the living must be studied from the living. Keeping this in view, much that is divergent in the statements of authors may be reconciled.

The testimony of authors falls naturally under four heads.

(*a*). The form and position of the immature uterus.

(*b*). The normalization of the anterior position and curve.

(*c*). The conditions attending the normal backward and erect positions.

(*d*). The position of the uterus in the cadaver.

(*a*). An examination of the fetal uterus, at which period the neck exceeds many times the body in weight, shows that the organ is considerably flexed forward; the body of the organ is pressed generally to the right and forward, by the rectum distended with meconium. More rarely the organ is developed completely straight, while occasionally the retroflexed condition of the infantile organ is observed. This leads Edward Martin to the conclusion that anteflexion is not an essential stage of development but the cause must be sought in accidental conditions. These conditions are partly the result of the great flexibility of the imperfectly developed organ, particularly at the isthmus uteri, the pressure of meconium, and, at the later period of development, of feces and gas in the rectum and other intestines, which press the body from behind and above. Friederich Hach, as a result of frozen pelvic sections made upon the new-born, comes to the conclusion that the uterus is curved (bogenförmig) on its anterior wall, as the result of rectal distention.

Klob somewhat modifies this view of Martin by the opinion that before and at the beginning of puberty the uterus is neither ante- nor retroflexed, but at the first period of adult development the organ shows a slight anterior curvature, in consequence of which the convexity of the uterus approximates the posterior wall of the bladder. The cause of this is sought in the unlike development in the mass of the organ of the submucous connective-tissue layer, which Rokitansky asserts is developed in excess in the posterior wall in the region of the internal neck. The opinion of Martin is sustained by Boullard, Vermeuil, Gosselin, Porchat, Picard, Aran, Soudry, Piachaud, Cusco, and others, both as to the frequency of anteflexion and the rarity of the opposite form of the organ. The difficulty of explaining the evolution of the puerile into the more erect form of the normal adult organ is met by Penas with the statement that "with increasing age the organ tends to redress itself." Others hold that this nominally normal anteflexion disappears at the time of complete puberty, adopting the theory of Rouget that the uterus is an erectile organ. This is a point at which much conflict of opinions prevails; some maintaining that during menstruation this normal anteflexion is increased by turgescence of the blood-vessels; and that this form of development prevails until the occurrence of the first pregnancy.

The weight of facts as yet observed shows that, whatever may be the cause, an anteflexed form is the rule in the incomplete state of the organ, which it is not unreasonable to suppose may be prolonged into the adult uterus, or at least, cast a certain and normal influence on its future form and position. The rarity of primary retroflexion—congenital so called—in the adult may be explained by its rarity in the puerile state.

(*b*). The evidence regarding the normality of the forward position and curve is nearly all obtained from the living subject. The antecedent condition of the uterus is supposed to exert considerable influence on anteflexions. Bennet and a few others hold to the view that this position is usually confined to the nulliparous organ; Martin, in the same condition of the uterus, while not distinctly claiming an anteflexed position, says that the anterior wall may be felt by the exploring finger through the anterior vaginal vault, with the subject upon her back, provided no pressure is exerted upon the abdomen. Subsequent to this statement, Martin came to the conclusion that in examining a women either upon her back, side or erect, the cervix is found directed to the hollow of the sacrum. Hueter points the cervix against the perineum or coccyx. B. S. Schultze reasons that, as in nulliparæ the circumference of the upper cervical section of the uterus is considerably less and more flexible, and the vagina more firm than in those who have born children, the position of the organ is necessarily that of anteflexion; while in the latter, from the reverse of these conditions, version is more generally observed.

In 1853, Boulard, by the examination of 107 dead subjects, came to the conclusion that a slight degree of anteflexion was to be considered the normal position of the virgin uterus. This conclusion had a marked effect upon the opinion of observers. Many who had formerly held that the uterus had no relatively fixed position, among whom were Vermeuil, Gosselin, Aran, Cazeaux, Bennet and Tilt, sanctioned the statement of Boulard. It will be observed, further, that this conclusion differs materially from that reached by others who have reasoned from facts obtained exclusively from the cadaver.

The axis of the pelvic cavity affords a fair measure of the relative position of the uterus, and has been used by many, without, however, giving unanimity in the results. Martin says that the conclusion of Velpeau, Malgaigne, Valleix, Becquerel, and many others, that the unimpregnated uterus lies in the axis of the pelvic entrance, has less exceptional value than the statement of Herrgott that the organ does not lie in the principal axis of the pelvis, but behind it, the point of the cervix being 1 to 2 cm. before the connection of the sacrum with the coccyx, and the fundus for the most part 3 cm. below the pelvic entrance. Most authors place the fundus a few centimetres lower (Martin). Sappey's measurement, however, is 2 to 2.5 cm. Hennig found that the long axis of the body of the erect woman falls behind the fundus, cuts the cavity of the organ, passes close to the forward curvature, and again passes through the organ between the body and the neck. The results obtained by Hennig very justly gained no adherents. It needs but a slight study to show that such a section of the uterus by the axis of the body requires either a double flexion or an anterior flexion of the cervix at very nearly a right angle. Averard expresses the more generally received opinion by the statement that, when the woman stands erect, the long axis of the uterus, when in the normal position, forms an angle with the horizon of 75°. Hueter holds as correct that the long axis of the uterus lies nearly in the axis of the strait, "or, if one wishes to be more precise, the axis of the organ lies somewhat behind that of the pelvis, but parallel to it." This may be regarded as the classical position of the text-books. Good types of it are to be seen in the illustration of Hodge and Sims. The illustration of Kohlrausch, which has had a marked effect on the minds of writers, shows the same harmony between the axis of the uterus and pelvic cavity, but not in the same offensive degree. All of these various measurements and angles are but another way of expressing in mathematical language the opinions of the writers that the anteverted and anteflexed position of the uterus is its normal attitude. Even when perfect coincidence is claimed between the two axes, the anterior position of the organ is well defined by the expression, since the axis of the pelvis defines an arc the radius of which terminates anteriorly to the pelvic cavity.

Mathematically the anterior position of the organ is well expressed by the authors who have observed the angle formed between the vagina and the uterus. Martin states this angle at 155° forward. This, with which many agree, conforms very nearly to the classical idea of position. The anterior angle formed by the body of the uterus with the neck is placed by Scanzoni at 140°, by Rokitansky at 165°, with which statement Martin agrees. Concerning these angles Hueter very justly remarks that no practical value attaches to them, and that in the living woman it cannot be established whether, in the normal form and position, the uterus in its long diameter corresponds with the axis of the pelvis, or what value the angle between the long axis of the uterus and vagina may have. However precisely these values may be stated, they are only approximately true. They are of service, however, as giving a clear idea of the extent of anterior position, held by careful observers as normally existing.

Penas examined 114 women in the Hospital Lourcine at Paris, the majority admitted on account of venereal diseases. Of this number, 44 were observed in whom the uterus was perfectly erect, and in 52 anteverted or flexed; while only in 6 cases was the backward position observed. Martin, who severely criticises both the method of observation and the results obtained by Penas, in order to test these results, gives the position noted in 8,528 women examined in his clinic; in 3,201 of whom neither version nor flexion, backward or forward, was observed; 2,325 were found to suffer from anterior or posterior displacements. The first group Martin regards as normal; while of the latter he observes that these "numbers do not appear as the regular and normal position, especially when we consider that those who sought help were sick." Credé is pronounced in his opinion that anteflexion and -version are the normal positions of the organ, and remarks that only in the higher degrees of anteflexion, where the flexion causes essential obstruction, is mechanical treatment necessary. Martin takes Credé to task for this statement. He can be understood, however, only from the context of his article, admitting, in general terms, a forward displacement of the fundus uteri, as observed by the bi-manual touch, and quoting approvingly the statement of Hennig already noticed. Schultze and Schröder, while at variance as to the details, agree in assigning the normal uterus an anteflexed position.

It is difficult to conceive how it is possible to have any doubt of the normal character of the anterior position of the uterus. The difference among authors as to the normal existence of anteflexion disappears when we take into consideration that the term by many is used relatively and not with a specific meaning. There is no author who has represented his views graphically, who has defined his idea of a normal anteflexion by representing an angle, mathematically so called, at the junction of the uterine body with the uterine neck. These normal angles are all curves of longer or shorter radii. Under this view, the objections of many who are opponents of the normal anteflexion theory disappear. It is difficult to convey a well-defined idea by the use of a term applied, without any qualification, alike to conditions of health and disease. An angle of 165° in an elastic organ like the uterus defines a curve, not an angle. It is only by an exercise of the scientific imagination that it can be made to conform to the mathematical idea of an angle. Scanzoni, by the above-estimated normal angle, abandoned all precision in the use of his terms. He conformed, however, to the usual expression among gynecologists when defining the normal position of the uterus. The idea conveyed by Scanzoni can be more definitely expressed when describing short lines of six or seven centimetres, and this line existing in an elastic mass like the uterus, by stating that the organ describes an anterior curve of 15 centimetres radius. In abandoning the term flexion when describing the normal position of the organ, we leave behind us nearly all the debatable ground in the matter of the normal position; and by substituting for it the term curvature as defined by its radius, we express more accurately the normal condition of the parts.

(*c*). The literature concerning the normality of the vertical or backward position of the uterus is scanty and unsatisfactory. "Simple retroversion," remarks Goupil—and without this state of simplicity the possibility of a normal condition is doubtful—"whether in nulliparæ or multiparæ, is so rare that it may be said to exist only as a symptom of some other condition." In 115 nulliparæ examined by him at the Loureine Hospital, there were only 3 cases of this character, none of them normal. In the same total of cases he found the organ straight in 19. The difference in observers is well illustrated by the fact that of 50 nulliparæ examined by Depaul, the uterus was found "straight" in 32 cases. Gosselin nearly verifies the results of Depaul, having found this state of the organ in 18 out of 45 cases. The only possible normal retroversion that Martin admits is the physiological one of the second month of pregnancy. Claudius, gaining his knowledge from the dead subject, declared his belief that the uterus is found normally with its posterior surface lying close to the posterior pelvic wall, as the lungs lie against the ribs, and that in the sexually healthy woman the uterus rests immovable in the pelvis. Yet the opinion of Claudius finds supporters even at this day; Holstein indorsed it in 1874 in an inaugural thesis. Hueter holds to the opinion that the most frequent position of the uterus is one nearer the sacrum than the pubes. Martin, in a posthumous paper published by his son, modifies the views advanced in the opening chapter of his book on flexions. He says, "When the index finger is introduced without force into the vagina, the cervix is forced to the side, or displaced backward or forward, without inducing any pain, but not reaching the uterine body at any point near the vaginal part." Such a position could only be detected by the finger when the organ is erect. It follows then, that towards the end of his career this observer held that the nearly straight or erect organ was ideally correct.

Lazarewitsch states that the uterus is situated behind the "middle line" of the pelvic canal, the uterine body not being perceptible to the touch either through the anterior or posterior vaginal vault, provided the uterine body is not forced down by pressure on the hypogastrium.

The position of the uterus with reference to the pelvic outlet, or its position relative to the vaginal depth solely, must necessarily throw considerable light upon the forward or backward position of the normally mobile uterus. Conceiving the uterus in a position of so-called normal anteversion, it is evident that, if it descends in the pelvic cavity, its cervix following the concavity of the sacrum and coccyx, the fundus of the descending organ passes backward, while the cervical portion undergoes a corresponding movement forward. In this way we can conceive of a normally erect organ, presuming a movement of descent within a limit of health. Upon this question all measurements of the distance of the cervix uteri from the perineum or external soft parts have a partial bearing. Martin, with a point of departure from the end of the coccyx, places it at 1.5 to 3 cm. Aran says, "L'utérus ne repose pas sur le plancher du bassin. Il en est séparé par un intervalle, qui est ordinairement de 2 cm. et s'élève rarement jusqu'à 3 cm." In those who have not born children and in girls the cervix is from 7 to 8 cm. above the ostium vaginæ (orifice de la vulve), and in those who have born children it stands at an elevation of 6 cm. Lazarewitsch states the least distance at 6 cm. These measurements have but little practical value, owing to the extreme mobility of the outer soft parts. These distances, however, place the uterus sufficiently high to give the organ an anterior position parallel to the forward curvature of the middle part of the sacrum. Under these conditions it is conceivable that, if the uterus were to hold normally a straight or vertical position, it would depend upon forces not resident in the uterus, but foreign to it, and to what is theoretically conceived to be the normal operation of its direct supports.

At the proper place we shall be able to prove that the uterus cannot be assumed to have a fixed distance from either the point of the sacrum or the external soft parts that holds true to either the mass of women or to an individual.

(*d*). The statements of authors as to the position of the uterus in the dead subject are worth a short notice. While a few facts of great importance may be derived from this source, yet great caution must be exercised in drawing conclusions from them.

Henle says, "that to judge of the position of the organ in the dead body, one must have regard to the conditions under which it is found; that to himself it is doubtful whether at the conclusion of death, the relation of the parts to the living are the same." Figure 330 in his "Handbuch der systematischen Anatomie des Menschen" is a good illustration of the character of figure a strict copy of the actual pelvic section will afford. The organ is represented in a position of strong retroversion. In gynecological investigations the conditions are unfavorable to a correct knowledge. The parts are generally examined in an empty condition of the bladder and rectum, from which circumstance the position has to be estimated (Schultze); the same exercise of deduction must be resorted to, in using the facts furnished by the pelvic section. In death the firmness of the uterus and its neighboring parts changes, but in the fresh cadaver, long before the firmness and elasticity of the connective-tissue supports are lost, the uterus by its weight alone falls backward, to which may be added the gravitation of the intestines in the same direction, which seems a sufficient explanation of the fact that a pelvic section in the dorsal position always shows the organ in a state of retroversion (Schultze, Henle). The inference is natural that, in the living women, the usually found anteverted position of the uterus in an empty condition of the bladder is due to muscular action. There is scarcely an exception to this backward position of the uterus in the representation of the pelvic section; the ovaries and the broad ligaments are also represented as sharing in the movement (Pirogoff, Le Gendre, Tüngel). All authors agree that this is a post-mortem change; nor is it necessary that the parts should be exposed to a prolonged operation of the force of the death-changes in order to show this position. Claudius is the only exception among authors who has reasoned directly from the dead to the living, without giving due value to the effect of death as a factor in the post-mortem movements of the organ. Schröder, who gives intra-abdominal pressure great value as an agent in securing the uterus in position in the living woman, explains the after-death position of the organ by its absence, and also to the development of gas in the intestines during the death struggle. The absorption of intercellular tissue may also have a certain value, if not in the direct causation, in permitting free movement within the pelvis (Israel).

Schultze is the only one among the authors quoted who seems to recognize the importance of the action of the uterine ligaments in this post-mortem position. To ascribe such an important and uniform change to the force of gravity alone is to overlook what is inferentially a fact, that vital action plays an important role in the phenomenon of uterine position in the living.

No uniformity prevails among authors who have illustrated their ideals of uterine position graphically; and as a consequence much controversy has been carried on concerning the correctness of these different illustrations. As we shall see, there is a wide scope for difference in the details of such an illustration while the central figure approximates the truth. The warm controversy between Schröder and Schultze about the correctness of their pictures of uterine position originated in the error in which both authors were involved, that it is possible to do more than portray an ideal position. To represent the actual position of the unimpregnated uterus is impossible. An artist, when he represents a carriage wheel in motion, does not depict any spokes at all; and equally so, since it is impossible to represent the uterus as a fixed organ, it cannot be given any one position, within a certain normal range, that does more than approximate its true place.

The figures of authors illustrating this important point of gynecic science may be divided into two groups; one aiming to give an ideal of the position of the organs within the living female pelvis, and the other striving after absolute realism. Types of the first, which we have called the classical position, are found in the works of Kohlrausch, Marion Sims, and Hodge.

The essentials of these figures are a distended rectum and bladder, with the uterus lying between them very nearly in the long axis, parallel to that of the pelvic cavity. The slight difference being that, in the first author's figure, the virgin uterus is represented, and in the two latter that of the child-bearing woman. These figures, particularly that of Kohlrausch, have furnished the material for illustration in nearly every text-book for the last twenty years. In reality nothing can be farther from the truth. They take for granted a nearly impossible conjunction of circumstances, namely, an equal and uniform distention of bladder and rectum, which might not occur once in the lifetime of the subject; and further, equal value is assigned to the bladder and rectum in influencing uterine position and movement, when in reality they play vastly different parts in the dynamics of the pelvic organs.

The second group of illustrations is more interesting. These figures deserve a brief description, as showing the difficulties in the way of reaching what is styled by modern art a realized ideal in this matter of uterine position. The more recent attempts are those of Schultze and Schröder, upon whom the interest centres. Schultze's criticisms upon the figure of the latter are in the main well deserved. Thus the cervix is too near the anterior pelvic wall, as if forced forward by a retro-uterine tumor; the fundus is placed above the superior strait, and as if to exaggerate the error, the soft parts are made to extend so far beyond the pelvic outlet that a line drawn from the lower border of the pubes to the point of the coccyx bisects the uterine neck, the organ being yet represented at a proper depth within the vagina; while the forward displacement of the cervix produces an enormous Douglas sac, really placing that cavity between the rectum and vagina. It is remarkable that Schröder places part of the uterus and nearly all of both rectum and vagina external to the pelvis. On the other hand, Schröder remarks of Schultze's figure, as an indirect defence of his own, that his theory of an inconstant angle at the union of the body with the neck, dependent on the varying degrees of vesical fulness, is a gross error, justly remarking that slight outward force can change the position, but considerable force is necessary to change the form of the organ. Concerning the great protrusion of the soft part in his illustration, he defends himself by an appeal to the drawings of the pelvic sections of Braune and Rüdinger in connection with numerous measurements of his own, by which he shows that Schultze very much underestimates the extent of the external parts, the result of which is that the os uteri in his drawing is placed too near the ostium vaginæ, which is found in practice only as the result of pelvic tumors. Schröder is supported in giving this position to the soft parts by Friedrich Hach, who, in a very recent monograph, places nearly the entire vagina external to the pubo-coccygeal pelvic diameter, and also gives the passage a very nearly horizontal direction. It is interesting to note that, as a result of the manipulation practised nearly exclusively by the gynecologist, namely the bi-manual touch, Schultze places the long axis of the uterus at nearly a right angle to that of the body; a position never given to the organ by the anatomist, and one also that the average practitioner would treat as abnormal.

This review of the abnormal position of the uterus given by various authors concludes the first part of the evidence. But we have yet before us a more important study; that of the range and cause of normal uterine movements, and which, in a great measure, turns upon the connection of the uterus with its neighboring organs, and its more direct means of support.

B. Anatomical and Physiological Evidence.

We have here three principal divisions to consider.

(*a*). The self-sustaining power that exists inherently in the uterus.

(*b*). The extent and cause of the normal movement of the uterus.

(*c*). The agents that limit or retard the normal movements, the so-called uterine supports.

(*a*). While it is admitted by general authority that the uterus has existent in its tissue qualities that tend to render the organ in a measure self-sustaining, there is some difference of opinion as to the tissues that possess these qualities. The most widely diffused theory is that of Rokitansky. According to this view, there exists a firm sub-mucous stroma of connective tissue, which is thin at the os internum, thicker at the fundus uteri, and yet more freely developed in the posterior wall, and which, by being prolonged into the vaginal portion, contributes to the thickness, firmness, and density of the mucous membrane of that part. This stroma is, so to speak, the scaffolding of the uterus and the cause of its upright position. Rokitansky's great rival Virchow enters the field with a counter theory, for which he contends as ardently as if he were defending a theological dogma. He asserts that the layers of the mucous lining of the uterus in no manner contribute to the support of the organ; that the mucous membrane at the cervix is relatively thin, and in the body of the organ yet thinner; that, instead of being dense and firm, it is very rich in cells, and comparable more to granulations than to the dense structure of connective tissue; that the real support of the organ is the parenchyma, which, in the body of the organ, is rich in muscular fibres and vessels, and, in the cervix, appears more abundantly supplied with fibrous connective tissue. It is impossible to reconcile these different views. They exist among uterine pathologists at the present time with the force of facts, while in reality they have simply the force of opinion. Rokitansky's sub-mucous connective-tissue layer bears the hypothetical relation to his theory that the imaginary ether does to the undulatory theory of light; but while a hypothetical ether is essential to the explanation of such a material as light, physical science would reject a like basis for a theory relating to an organ that one may take into his hand and demonstrate its parts. The theory of Virchow, as the more direct outcome of absolute facts, deserves more consideration than that of his rival. But for the reason that both theories are dogmatic, they deserve rejection in the shape in which they come from their respective authors. Both strikingly illustrate the evil effect of authority when it is expended in propounding rival theories instead of seeking truth. Independent thinkers in gynecology take the middle ground; but as explaining all that Rokitansky and Virchow claim for their theories, both are wrong. Even admitting the existence of the former author's theoretical submucous connective-tissue stroma, it could not explain all the phenomena of uterine normal and abnormal position. The purely gynecological view is different. Martin regards the uterine connective tissue as acting an important part in aiding the uterus to maintain its place, but does not limit it to any one layer. Hueter places great stress on the almost perfect equality in the thickness of the anterior and posterior walls as a means of preserving an equal balance in uterine position. In quarters in which the opinion of Rokitansky and Virchow have not produced undue effect, the opinions of gynecologists, so far as expressed, coincide with the above.

Practically, this power of self-sustentation, since we cannot isolate it from other factors in the phenomenon, is of sufficient force to bear the weight of the superincumbent viscera and to preserve a certain alignment between the body and neck of the organ, in opposition to the force of gravity; and, lastly, to preserve the form while the uterus is shifting its position under the operation of its neighboring viscera. If under this last-named circumstance the uterus changes its form materially instead of its direction, it answers to the condition of a morbidly mobile organ (Schultze)—a state occasionally found in practice, and usually the result of defective evolution, or of more recent pathological changes in the parenchyma of the uterus. It was the study of these two conditions that probably led Rokitansky to devise his submucous connective-tissue theory.

(*b*). The study of the extent and cause of the normal movements of the uterus is difficult and complicated. In view of hese movements, we cannot regard the pelvic cavity otherwise han as an area in which force and counterforce are contendng. The forces that produce these movements are partly voluntary and partly unavoidable and involuntary. Such a classification as this is, however, arbitrary. These forces merge one into the other. A uterine movement that, within a certain limit, is an expression of involuntary force, may, if prolonged beyond this limit, express the action of a voluntary force. An illustration of this is to be seen in the uterine movements attending normal respiration, and the movements of the same character, but more extended range, that proceed from voluntary forced inspiration. Many other movements afford examples of the same fact.

Authors generally recognize the mobility of the normal uterus, but differ as to the range. Hueter gives to the organ more frequent and greater movement in the direction of its ong diameter. In this direction it is usually voluntary, from the effect of movements of the diaphragm and strong bodily action. On pushing the organ upward by the finger, it quickly returns from the action of the abdominal muscles and viscera. This author characterizes the statement of Rockwitz as absurd, that he is able to raise the uterus to the height of the umbilicus. Hyrtl states that it may be forced upward two inches, and depressed one inch without encountering any special resistance. Säxinger says that by means of the sound the uterus may be raised two inches without causing the woman any pain. When the vagina is relaxed and the ligaments extensible, the uterus may be drawn downward until the cervical portion presents at the ostium vaginæ; but this is not always to be regarded as a safe operation (Hueter), and, as we learn from Savage, the sacro-uterine ligaments may be lacerated when the uterus is drawn down to that extent. On the other hand, Martin, while admitting uterine mobility, dissents from the statement of Hyrtl, and says that he has never been able to cause such a range of movement. M. Claudius holds that uterine movement is limited by the flexibility of the neck, and the same author has elsewhere stated that the uterus lies immovable against the posterior wall. Avrard (de la Rochelle) regards the chief uterine movements as existing with reference to a determinate position, from which it may be pushed by the exploring finger, and to which it quickly returns on the withdrawal of the displacing force. A movement which some authors would regard as normal Martin defines as abnormal. Such, for instance, as a considerable displacement of the organ caused by the pressure of the finger in the vagina.

In order to understand fully the grounds upon which we shall base our conclusions as to the normal position of the uterus, it is important to carefully analyze the cause and effect of the various forces which operate within the pelvic cavity. As the result of all these forces is to produce uterine movements, we are able to classify them to better advantage as causes rather than effects.

(α.) Respiration and abdominal forces causing uterine movement.

(β.) Effect of posture on the position of the uterus.

(γ.) Vibratory movements.

(δ.) Effect of varying degress of vesical fulness.

(ε.) Effect of rectal distention and collapse on uterine movement.

In a work undertaken as a preliminary to this investigation, in the year 1874, and published the next year, upon uterine movements, I succeeded in proving the character and extent of the movements, and also in representing them graphically by means of a recording mercurial manometer. As I have seen nothing since so full and complete upon this interesting subject, I shall to a great extent draw upon that paper for the material used here.

(α.) While insignificant in their normal range and having but slight, if any, value in causing pathological results, yet the movements of the uterus due to the respiratory movements of the diaphragm become of importance when we apply to the uterus mechanical means to correct its dislocations. The uterine movements attending respiration, as represented by the tracings of the recording manometer, are of a simple character. The downward part of the curve records the inspiratory pressure. The character of the respiration, so far as it is rapid, slow, or forced, does not change the curvilinear nature of the tracing. The spaces between the summits of the curves express the expiration pauses. The inspiration pause is so short as to permit the uterus to ascend almost immediately, thus giving the tracing a short lower and a lengthened upper curve.

During articulation, the uterus is subjected to a series of rapid movements. The character of the curve taken during conversation is that of ordinary respiration of somewhat greater amplitude, with its ascending and descending curves interrupted by numerous sharp notches, which correspond to articulate words. Some acts which involve the use of the respiratory organs produced marked uterine movement. The full-chest inspiration necessary in holding the voice while singing prolonged notes induces a sudden extended downward movement, gradually returning to its initial point. This movement may account for the frequency with which uterine displacements, and usually those which indicate a lack of sustaining force, are met with among professional singers. In coughing, a considerable movement of the uterus occurs, the tracing of which represents a rapid series of acute curves with a nearly uniform notch near the lower angle, and which is usually found in tracing in which the uterus has reached the limit of elasticity in its supports, and there is a disposition on the part of the organ to return to a position of equilibrium, which is resisted by a continuance of the displacing force.

But few of the authors speak of these movements. Hueter gives them incidental mention and no importance, except to those which attend sneezing and coughing. Frankenhäuser says that in easy breathing with costal motion the movement of the uterus is not very noticeable ; while Martin strangely confines all the movements attending the various states of the respiratory apparatus to the vaginal portion of the uterus, which he says is forced downward and forward. It is not easy to understand how a force, acting upon the general contents of the pelvic cavity, could, so far as it affects the uterus, be confined to the neck of the organ. In estimating the effect of abdominal pressure upon uterine movements, it is not an easy matter to eliminate the extent to which the respiratory organs are involved. In voluntary straining or bearing down, for instance, the diaphragm, held fixed by a retained full inspiration, becomes the counter force, while the abdominal muscles contract and force downward the pelvic viscera. The tracings of uterine movements so caused are simply upward and downward movements of the recording pen of great amplitude, involving a corresponding downward displacement of the uterus of half to three-quarters of an inch. These movements become of importance chiefly because of the great power that can be exerted during this act ; and which must play a certain part in the dynamics of abnormal uterine movements. In the experiments to which we referred, this force was found to measure, by the mercurial manometer, from one to six pounds. If we regard the opinion expressed by Poppel and Duncan, that the force expended in an easy labor is from four to six pounds, as at all correct, the remarkable fact is forced upon us that there exists in the average woman—non-pregnant—voluntary expulsive force equivalent to an easy labor, and which she is capable of exerting at will. It is evident, therefore, that these movements, as the result of a force existing potentially behind them, are of great importance, not only in a normal, but in a pathological study of uterine mobility. But while the action of the abdominal muscles are capable of exerting so great a force in the direction of uterine displacements, authors (Schultze) may be named who regard the intra-abdominal pressure as one of the factors in sustaining the uterus in its so-called normal position, and especially that of anteflexion.

(*β*.) Like the group of movements already considered, those due to posture, when within a normal limit, are not of considerable extent, and yet a study of them is indispensable to careful estimate of uterine position. The most elaborate investigations of the effects of bodily position on uterine movement are those of Dr. J. H. Aveling, of London. Considering the results he reaches in normal changes of position due to this cause, we find the uterus descending in the pelvic cavity to but a very slight extent. Ascension, when in the recumbent posture "the pelvis is tilted over the uterus, relieved from the pressure of the abdominal viscera, gravitates away from the vulva, and in this way, as has been already shown, any uterine depression which may have have taken place during the day is remedied at night." Anteversion (antrorsion) in mean normal relation may be increased by an inclination of the body forward, easily augmented, according to the author, into an abnormal degree; especially when uterine enlargement exists as a factor in the movement. Retroversion (retrorsion) may result from the erect position, rom long recumbency, but in the normal condition of the parts it is an insignificant change in position. Torsions (dextrorsion and sintrorsion) are rarely, if ever, normal movements. Dr. Aveling regards dextrorsion to a certain extent a normal change, aused mainly by women sleeping upon that side.

Bernutz and Goupil make the difference in uterine position between standing and lying as follows: the posterior cul de ac to the "vaginal orifice" is eight millimetres longer, from the os uteri eight millimetres, while the anterior cul-de-sac is epresented fifteen shorter while lying. In another figure the nterior cul-de-sac is seven shorter, the posterior unchanged nd from the cervix nine millimetres longer in the recumbent posture.

The measurements were roughly taken by marks upon the xploring finger and cannot be regarded as furnishing more than n approximation to the real variation of uterine position due to the change in posture. According to Schultze a passive movement backward due to the gravitation of the uterus is common in the dead subject, but is rarely met with in the living. He states, however, that in the erect position the uterus gravitates forward, this tendency being further assisted by the intra-abdominal pressure. The inference that the reverse occurs when the person is in the dorsal position is legitimate. Avrard states that when the woman is erect, the uterus in the normal position forms an angle with the horizon of 75°, but Hueter objects to this on the ground that with every movement of the body the uterus is changing its position. Martin, in his writings edited by his son, says in general terms, as the result of careful observation, "that a marked difference in the position of the organ in the erect posture, or the dorsal or lateral decubitus does not exist, unless an unusual mobility of the uterus be present."[1]

In the contribution to this subject made by the writer and already referred to, tracings of considerable interest were obtained of uterine movement due to postural changes. The tracings of these movements express the following variations in the distal column of the manometer: (1.) A sudden rise on sitting up from the zero position (lying upon the back); (2.) a slight further rise on standing up; (3.) a vibration movement when stepping upon the floor; (4.) a sudden rise of five to eight-tenths of an inch upon squatting; or (5.) a slight descent upon bending forward; (6.) a quick but tremulous ascent on resuming the standing position; (7.) a slight fall upon sitting down; (8.) a return to zero upon lying down. The tracing, therefore, records the varying amount of pressure upon the uterus during the postural changes described. This observation points clearly to what occurs in the pelvis. In lying down, the pressure is *nil;* in sitting the visceral gravity is expended partly upon the pelvic organs and partly upon the lower portion of the abdominal wall in front; in standing, the anterior wall of the abdomen becomes more perpendicular to the plane of the pelvic excavation, the pressure is reflected off the abdominal wall downward in the line of the pelvic axis; in squatting, the weight of the viscera is thrown upon and above the pubes, and the pressure taken off the pelvic organs, consequently the uterus rises in the pelvic cavity, the fundus turning forward and the neck backward. The absolute uterine movement corresponding to the abscissa of the curves in these tracings is from .5 to .8 of an inch altitude.

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[1] "Dass ein wesentlicher Unterschied in der Lage des Organs bei der aufrecht stehenden, wie bei der auf dem Rücken oder auf einer Seite liegenden Frau nicht stattfinde, wenn eine mehr als gewöhnliche Beweglichkeit nicht besteht."

(Concluded in the next number.)

THE THERAPEUTIC VALUE OF THE HOT MUSTARD-BATH IN PNEUMONIA IN CHILDREN.[1]

BY

LEONARD WEBER, M.D.

New York.

THE hot mustard-bath I have used so far in severe cases of pneumonia of children only. Before stating my cases, I beg your indulgence for a few general remarks as to the different forms of pneumonia, inasmuch as they are all met with in infantile as well as adult life. In his essay on pneumonia in Ziemssen's Handbook of Special Pathology and Therapeutics, Prof. Jurgensen says: "Croupous pneumonia is not a local, but a general disease. The inflammation of the lung is only the main symptom, and it is not possible to explain all the morbid phenomena by the local affection. The supposition of a specific, disease-producing agent is therefore necessary. Croupous pneumonia belongs to the class of infectious diseases. That the statement of such theory is of great importance, as, when generally accepted, it must in a great measure modify the treatment of the disease, there can be no question." In his practice, Jurgensen takes a bold stand by his theory.

Hardly any disease runs so typical a course as croupous pneumonia, and in otherwise healthy individuals it will generally terminate favorably without medical aid, if it be simple, uncomplicated, and of moderate intensity. As such, we need not treat it any more than an ordinary case of measles or scarlatina; and, besides, we have been taught by experience that any violent treatment which would lessen the pneumonia patient's strength, will also diminish his chances of recovery. In the treatment of pneumonia, I have been a follower of the late Prof. Traube's theory and practice, and of remedies intended to act, have ordered of an infusion of digitalis—ʒ ss. or ʒ i. to ℥ vi. with ʒ i. or ʒ ij. of nitrate of soda—a tablespoonful every two or three hours for adults, and less in proportion for children, whenever the pulse and temperature of the patient indicated the necessity of doing something to bring them down. In the first five years of my practice, it was my good luck to meet with a far greater number of simple cases of pneumonia than complicated ones, and I was much pleased with the results obtained by the use of digitalis. I strongly believed in it, and I will say at once that I continue to do so, although I have since learned that it is not a panacea for pneumonia.

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[1] Read before the Med. Journ. Ass'n, Feb. 15th, 1878.

On the heels of a perfect success, which I had had in 1864, in a severe case of secondary pneumonia in typhoid fever, where an infusion of ʒ i. of digitalis brought down the pulse from 150 beats to 90 within 36 hours, came a decided failure. It was a well-developed case of primary pneumonia, sthenic in character, concerning a previously healthy young man. Nearly the entire right lung was consolidated. Digitalis, as well as other remedies, failed to effect resolution, and the patient became comatose and died on the seventh day.

From 1865 to 1868 I had the management of the St. Francis Hospital of this city. Nearly one-half of the cases of pneumonia admitted during that period of time were asthenic in character, and their mortality was over 50 per cent in spite of the free exhibition of stimulating and excitant remedies. The simple cases of pneumonia that came to the hospital gave a mortality of 12 per cent, and digitalis and an evening-dose of Dover's powders were the only remedies prescribed, besides nutritious diet and plenty of fresh air.

By their carefully prepared statistics, Louis and Diehl have brought venesection, once so dominant in the treatment of pneumonia, completely into discredit. We know now that it may be necessary to bleed in certain cases of pneumonia, although not with a view of curing the disease thereby. The few indications for bleeding in pneumonia, *i. e.*, unusually high fever in robust individuals, sudden development of edema in other parts of the affected lung, symptoms of compression of the brain, showing tendency to cerebral edema, have ever been present to my mind; but I have only once had occasion to bleed a patient for inflammation of the lungs. He was a German mechanic; 26 years of age, not very robust, whom I had operated for hydrocele of unusual size, and who was taken with double pneumonia in the upper lobes while confined to his bed, on account of the previous operation. On the fifth day his dyspnea became so great, and his pulse so fast and small, that I drew about ten ounces of blood from his arm, and his dyspnœa was relieved almost immediately. Under continued use of digitalis and stimulants, he made a good recovery. With the application of cold and wet compresses to the affected side, as Niemeyer practised it, or cold baths, in order to reduce the fever, as Jurgensen recommends, I have no experience. Nor have I used the tartrate of antimony in small, or quinine in half-drachms doses, except in intermittent pneumonia or veratrum. The latter remedy is held in high esteem by many distinguished writers and careful observers.

The pneumonic patient may need excitants and stimulants when his heart shows signs of giving out. Camphor, carbonate of ammonia, mush, and wine are the remedies for this purpose. Insomnia, a not unfrequent and unpleasant symptom, we remove by opium. It is but a few weeks since I relieved the nervous restlessness and insomnia accompanying a severe case of pneumonia in a patient by giving her simply 5 grains of Dover's powder in the evening, which soon made her comfortable and procured sleep. When resolution is protracted, Jurgensen recommends the spirits of turpentine—12 drops every two hours—very highly. I have no personal experience with turpentine for such purpose, but I believe that the protraction of resolution in pneumonia beyond the usual time, as well as the non-absorption of pleuritic effusions, are often associated with or caused by a state of acute anemia of the patient, and that resolution and absorption are best accelerated by remedies which rapidly improve the anemic condition. Besides a liberal diet and the discreet use of stimulants, nothing will do better than iron. In such cases of pneumonia or pleuritis I have given Bland's pills in large doses with the most satisfactory results. Five years ago, I attended a case of migrating pneumonia, in a young man who had previously been in good health. Dr. Alonzo Clarke saw him also with me.

Quinine and digitalis were freely given, but no progress was made towards improvement for weeks, until I prescribed iron in large doses, when he began to get better, and finally recovered.

Before stating how I came to use the hot mustard-bath in certain cases of pneumonia, permit me to speak more fully of the primary asthenic form of pneumonia. The terms "sthenic and asthenic" in fevers have been introduced by Brown, and were established on the theory of the excitability of the individual. They are useful and help us greatly, I think, in individualizing the cases, and finding sound reasons in order that we may treat the pneumonic *patient* on rational principles, and not his *pneumonia* on dogmatic arguments. We may distinguish: 1. Secondary or individually asthenic pneumonia. We see it in persons of feeble health, in old people, as a complicating disorder of fevers, particularly typhoid, etc.

2. Primary asthenic pneumonia. Whether there are quantitative differences of the pneumonic agent, or qualitative modifications of that agent which produce this form of pneumonia, there can be no doubt, I think, as to its independent existence and to its greater malignity, compared to simple pneumonia.

The premonitory symptoms of it are similar to those of acute infectious diseases, lasting several days; often like those of typhoid fever. There is no regular well-marked chill, but recurring rigors instead. The exudations develop slowly and are comparatively limited. Statistics show the upper lobes to be more often the seat of disease than the lower; in simple pneumonia we find it vice versa. It is more often combined with pleuritic effusions and unusual prostration of the patient, with early delirium and somnolence, on account of which it has been called *typhoid pneumonia.* In the majority of the cases the fever is unusually high, spleen and liver are generally much enlarged, particularly the former. Albuminuria is hardly ever wanting; gastro-intestinal disturbances, nausea, diarrhea, etc., are of frequent occurrence in this disease, and have led to the name of *gastric* or *bilious* pneumonia. It has sometimes been mistaken for typhoid, and been described as *pleuritic* or *pneumonic* typhoid, also as *adynamic senile fever.* Icterus is more frequently present in this form than in the simple, and more strongly developed. So it happened, that, instead of primary asthenic pneumonia, many authors wrote of two different kinds of pneumonia, the *bilious* and the *typhoid;* although it is easy to show that these are not only one and the same disease, but are identical with primary asthenic pneumonia.

Stoll, *Frank*, *Hildebrand*, *Potter*, *Grisolle*, *Trousseau*, *Traube*, in fact all writers on asthenic or malignant inflammations of the lungs, speak of the frequency of icterus and gastro-intestinal disturbances in the course of the disease. They all agree that croupous pneumonia, in certain localities, at certain seasons—more frequently in fall than in winter and spring—is changed in type and more malignant in character; that it becomes primarily asthenic (bilious, adynamic, typhoid), and that, besides other anatomical and clinical differences, it is often accompanied by icterus and grave symptoms from the central nervous system, and that the icterus does not depend so much upon gastro-duodenal or hepatic causes, as upon a specific infection of the blood. The mortality of this form of pneumonia is much greater than of the simple, and Walshe, Grisolle, Graves, Trousseau, Lebert, and others believe that the changed character of the disease, the peculiar epidemic constitution at certain times and in certain places, have a most important influence in increasing the percentage of death. The same we are taught when we look into the history of therapeutics. There are principally three methods of treatment, from the time of Hippocrates to the present era: the antiphlogistic—venesection—the treatment with purgatives and emetics, the treatment with stimulants. To these different methods correspond the simple, the bilious, the typhoid pneumonia.

I have yet to speak of the catarrhal form of pneumonia—*broncho-pneumonia*, as it was mainly in severe and extensive forms of this disease in children where I employed the hot mustard-bath when medicines had failed to bring relief. It occurs most frequently as a complication of measles and whooping cough, simply because capillary bronchitis attacks oftener children suffering from those diseases than those in previous good health. As soon as pneumonia develops in cases of capillary bronchitis, the temperature rises to 103° and more, in the axilla, within a few hours; the pulse beats fast, the face becomes flushed, the child is exceedingly restless, wears an anxious expression of countenance, but soon becomes apathetic and somnolent. The course of the disease is sometimes quite rapid, and in debilitated children it may terminate fatally within a few days. In such cases the previously red face turns pale and livid, the lips are blue, the restlessness gives way to increasing apathy and drowsiness, and by the severe disturbance of the respiration the blood becomes rapidly carbonized. Prompt resolution in this form is as rare as it is frequent in genuine croupous pneumonia; not infrequently it changes into chronic pneumonia, with its disastrous consequences to the lung-tissues, and the general health of the patient. The treatment of broncho-pneumonia is based on the same general principles as that of croupous pneumonia, but varies with the individuality of the case.

The great value of the hot mustard-bath as a means of saving the life of a pneumonic patient, after other remedies had failed, I learned in 1869. About a year before that, I attended Jennie A., 10 months old, a previously healthy and robust child, afflicted with extensive pneumonia, after having been sick for a week with bronchitis. On the third day after I had seen and treated her in the usual manner, she became rapidly cyanosed and died.

CASE I.—In November, 1869, another female child, of about the same age and similarly good constitution, in the same family, became affected in the same way, and when I saw it I recognized pneumonic infiltration of both upper lobes. In spite of emetics, digitalis, mustard-plasters and poultices over chest, she became cyanotic at the end of the third day, with stertorous breathing, cold extremities, and failing heart's action. It occurred to me at this stage to immerse the patient in a hot mustard-bath of 105 F., prepared by diffusing about a pound of mustard in a baby-tub full of hot water. I kept her in for about ten minutes, making thorough friction all over the surface, and until the skin had assumed a pinkish color. After being put to bed, which I had well warmed previously, the child began breathing easier, and soon fell asleep. The skin remained warm, and an hour after the bath, was perspiring freely. With the improvement of respiration, the pulse became stronger and less frequent, and the child took the breast readily. Encouraged by this success, I repeated the process four hours later with the same good result, and after having administered five baths in the course of forty-eight hours, and given no medicine whatever, I had the satisfaction of seeing my patient convalescent.

Of a number of other cases—at least fifty—I have had since, I have taken special notice of the following particularly severe cases:—

Case II.—J. O., fem. child, six weeks old. In 1874 had capillary bronchitis for some days, and when I first saw it, was almost moribund, pulse hardly perceptible. The hot mustard-baths, administered every three hours, soon relieved the lungs, allowed the heart to act again, and, without doubt, saved the child's life.

Case III.—G. W., boy of four months, 1875. Broncho-pneumonia, temp. 104°, P. 160, sinking fast. Same treatment. Out of danger after four baths within thirty-six hours.

Case IV.—I. S., girl of six months, broncho-pneumonia. Cyanosis and somnolence unrelieved by usual treatment; cured by the use of the baths.

Case V.—Geo. C., eight months, 1875. Broncho-pneumonia after measles. Condition hopeless before baths were used. Seven baths in the course of two days. Regained his health perfectly, and is now well and strong.

Case VI.—Clara S., sixteen months, 1876. Genuine case of pneumonia. No unusually bad symptoms at first, but protracted resolution. The lungs returned to their normal condition after the use of half a dozen baths.

Case VII.—In 1876 I saw a case of extensive pneumonia with Dr. Sch. It concerned a girl about seven years old, who had been ill for nearly two weeks when I was called in. Respiration, 72 per minute, pulse about 140, temperature in axilla, 103°. The child had been most carefully treated, but none of the remedies employed had succeeded in reducing the frequency of respiration or pulse. I suggested to Dr. Sch. the use of the hot mustard-bath, telling him of the good results I had had with it in some cases. He said the prognosis of the case was unfavorable, and agreed to give the bath a fair trial. He did so, and the child recovered completely.

Case VIII.—In 1877 I attended a case of broncho-pneumonia complicating whooping cough, with Dr. H. The child was between one and two years old, and when I saw it had double pneumonia, was cyanotic, and had been unrelieved by any remedies that were administered. Dr. H. readily assented to the use of the baths, and I was informed afterwards that the patient was quickly relieved by them, and made a complete recovery.

In these cases of capillary bronchitis and pneumonia I have successfully employed the hot mustard-bath when the patients were at their worst, and have succeeded in relieving the cogested lungs and helping the overburdened heart, after other remedies had failed to be of service. Now let us see whether we can find a theory to support the practice. In the hot mustard-bath we have two agents acting upon the surface of the body; in the first place, the mustard, a powerful irritant, will redden the skin, i. e., attract blood to the integuments, according to the old principle: "Ubi irritatio, ibi affluxus." The hot water, on the other hand, dilating the blood-vessels, as it is known to do when applied for a short period of time, helps to increase the amount of blood at the periphery. The surface of the body being large, a correspondingly large amount of blood is thereby drawn towards it, which must in a great measure relieve the obstructed pulmonary circulation. The cause of over-distention of the right ventricle of the heart being removed thereby, the heart itself gets a chance to regain its propelling power, in order to properly receive and discharge the blood that is brought to it. Again, there can be no question, I think, that the bath is also a powerful excitant and stimulant of the central nervous system, respectively of the vaso-motor centre, acting upon it by way of reflex, through irritation of the nerves at the periphery. At all events, in the cases in which I employed it, camphor and carbonate of ammonia, which are considered to have a potent effect upon the nervous system, had failed to relieve the comatose condition of the patient, when nearly all the alarming cerebral symptoms of the patient were materially improved soon after the first bath.

Finally, the bath may favor an exchange of the gases of the blood through the capillaries of the skin, as it is claimed in physiology that the skin of children particularly may, in a measure, relieve the respiratory organs by a vicarious action of its own, to remove the carbon and take up oxygen.

I claim for the use of the bath, that it is easily prepared; that the materials for it can be procured in the household of the poor as well as the rich; that its action is prompt; that there is no danger whatever in applying it as often as the urgency of the case may require it, and that it is a valuable means for fulfilling the vital indication in severe cases of pneumonia in children.

Other things being equal, I should not hesitate to use the bath upon the adult, and should hope for equally good success with it.

A PELVIC CURVE IN THE SHANK OF THE OBSTETRIC FORCEPS.[1]

BY

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Vice-President of the Philadelphia Obstetrical Society.

(With three Woodcuts.)

THE use of the forceps in midwifery is such an every-day occurrence in this country, that when delay is met with in any case of head presentation where no very decided contraction of the mother's pelvis is recognized, this is the resource which first suggests itself, and is almost invariably accepted. In nearly all such instances the instruments in common use enable the delivery to be accomplished safely and easily, and the faith of the practitioner is justly strengthened in these "iron hands."

But there happens every now and then a case in which the accoucheur, having applied, with the usual confidence, the blades of his long forceps to a highly placed head, locked them, and begun his traction, finds them, on the first use of moderate force, leaving the head, so that he is compelled to desist from his efforts at extraction. The forceps has *slipped*. This event marked the following cases, some features of which are briefly recorded.

CASE I.—A physician, in asking my aid in a difficult labor, requested me to bring embryotomy instruments, since he found himself unable to deliver the child with his forceps. I saw the patient, a multipara, who had endured several instrumental labors, at 1 P.M. The os uteri had been fully dilated since early in the previous night: the head presented, but did not descend, so that at 7 A.M. the accoucheur had applied his forceps (Wallace's); within four and a half hours he had made three unsuccessful attempts at extraction, the instrument slipping each time eventually from the head; he then had been bold enough to give ergot. An hour and a half had elapsed since the drug had been administered when I arrived, and I found her suffering from the almost tetanoid spasms of the uterus characteristic of the action of the medicine, very restless and anxious. The head of the child was now occupying the cavity of the pelvis, with the occiput anteriorly, and lying, to my surprise, not at all "locked." My own forceps (Hodge's) were put on easily, and the child, which was dead, delivered without forcible traction. There were deep indentations in the temporal region of its head on either side, the result of the "nipping" at the superior strait.

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[1] Read before the Philadelphia Obstetrical Society, Dec. 6th, 1877.

CASE II.—A multipara had fallen in labor for the eleventh time. It was stated that this process had on every previous occasion been assisted by the operation of turning or the use of the forceps, notwithstanding that some of the fetuses were not advanced beyond the seventh month; and all the children but the first-born, who was one of the latter and was now living, had been born still. The accoucheur in attendance, in the present instance, had found, when he first reached the bedside of the patient, the dilatation of the os uteri nearly complete, the membranes ruptured, the head of the child presenting. After three hours of waiting, in which the head failed to descend, he attempted its delivery by the forceps, but found it impossible to so apply the blades of the instrument that they would hold to the head; he had then, like the practitioner in Case I., administered ergot. One hour subsequently I met him: my examination showed the head still at the superior strait, with the posterior fontanelle at that part of its margin directly behind the right acetabulum. The patient was complaining of great pain, and continually making "bearing down" efforts. In consequence of her straining against me, I experienced a little difficulty in putting on my forceps (Hodge's), but a few minutes' traction sufficed to deliver a dead female child, though I found after extraction that the blades of the instrument had been adjusted to the head somewhat obliquely. The right parietal bone of the fetus was marked with an indentation which I referred to its forcible impingement against the sacral promontory.

CASE III.—I was called by a medical friend to consult with him in the case of a primipara, in which convulsions had supervened at the close of a tedious first stage of labor. The patient was already under chloroform when I saw her, and lying quietly; after half an hour had elapsed, however, another convulsion occurred. We then determined to deliver the child as rapidly as possible, and decided to apply the forceps to the presenting head. But our attempts with that instrument were futile, the blades always slipping away from the head. This was the first case in which I had been baffled in this way, and to save the patient from the danger of any want of adroitness on my part, we now asked the aid of a gentleman in whose skill this Society has the fullest confidence. He kindly responded to our call, but was as unable as ourselves to make the forceps hold, so that we were driven to the operation of embryotomy. Inspection of the cranium showed that the pieces torn from it belonged almost exclusively to the left parietal bone from about its supero-posterior angle, only a small fragment having been taken from the right parietal, and the occipital bone being not at all broken. The exact position of the head is not mentioned in my notes, but I infer from the parts of the skull removed, that the head was transverse with occiput to left ilium and entering the pelvis with its axis oblique to the plane of the superior strait, revolving about the sacral promontory; also that flexion was incomplete.

Case IV.—Two of my friends had been trying for three hours to deliver with the forceps a patient in her second confinement. This instrument had been used in her first labor, and the forcible pressure to which the child's head was then subjected was attested by the deep scars which marked it. The position of the presenting head on the present occasion was looked upon as that in which the occiput is directly behind the right acetabulum. With this view, the forceps (Hodge's) were applied with the greatest care, but a firm grasp of the head was not secured. After these efforts, I tried the adjustment of a pair of forceps I had brought with me of the same pattern, several times, but they always slipped, and I was no more successful with the Simpson forceps. A careful examination of the position of the head which I made led me to hold a different opinion as to the relations of the head to the pelvic walls, namely, that the *brow* was behind the right acetabulum. Relying on this idea, I essayed and believe I succeeded in rotating the occiput forwards to the left. Then I once more applied the forceps, which no longer slipped, and a dead child was delivered without much difficulty.

Case V.—A multipara, as in Case II., was in labor for the eleventh time; in all her previous confinements but one, in which she bore twins, the forceps had been used to effect delivery; with the assistance of this instrument, however, the labor had always been terminated without difficulty. In this instance I was called by the physician in attendance at midnight, labor having begun at an uncertain time on the previous day. The os was fully dilated, the membranes ruptured, and the head presenting with the occiput to the left acetabulum. The uterus was acting at intervals, but effected no sensible descent of the head; a certain amount of contraction was seen to exist in the conjugate diameter of the pelvis, and the woman was manifesting symptoms of exhaustion. Under these circumstances it was decided to aid the delivery with the forceps. I experienced great difficulty in so applying the blades of the instrument that they would lock, and when this was accomplished the forceps invariably slipped from the head when firm traction was made. I persevered for some hours, however, trying, with similar result, the Hodge, Davis, and Simpson forceps. Then another accoucheur who had come to our assistance made like attempts, but met with the same failure. We felt then obliged to diminish the head, and by this means finally delivered the fetus, a large female; the portions of the cranium removed belonged about the posterior fontanelle.

In all the above cases the failure to obtain a firm grasp upon the child's head with the forceps coincided with its high situation and some contraction of the pelvic diameter in the mother. In Cases I. and II., my success, after others had failed, was due to the later period at which I made my attempts, by which time the prolonged contractions of the uterus, increased in force by the ergot, had caused the head to descend lower in the pelvis. This explanation applies with especial force to Case I., in which the head had reached a locality whence any kind of obstetric forceps, even one of the most primitive description, would have served to extract it. In Case III., the final satisfactory adjustment of the instrument on the child's head depended, perhaps, on the greater length of the oblique diameter of the pelvis, into which the long diameter of the head fell when its position was changed, which permitted its engagement in a lower plane.

Now, why are the forceps prone to slip when placed on a head exceptionally high in the pelvis?

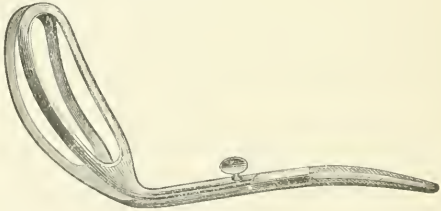

FIG. 1.

Obstetric forceps modified as suggested in the text. The dimensions are those of the "Hodge forceps," except that the shank has been bent at an angle of 120 , and there are no hooks at the end of the handles.

I believe because of the difficulty, and in some cases even the impossibility, from the peculiar form of the pelvic canal, of depressing the handles of the instrument sufficiently, when adjusting it, to allow a certain length of the blades to pass beyond a true equator of the head—as happens, for instance, when the parietal protuberances occupy the fenestræ—and such difficulty is enhanced by the condition of imperfect flexion of the head, which is likely to obtain when it lies high in the pelvis.

I have illustrated these points in the accompanying diagrams, in which the dimensions of the child's head at term, of the cavity of the mother's pelvis, and of the forceps are represented; the authorities whose measurements have been taken, with their values, being recorded on the margin. In figure 2, the head in complete flexion is represented at the point where it would be arrested, supposing the conjugate diameter of the pelvis to be but three inches in length. It is pictured

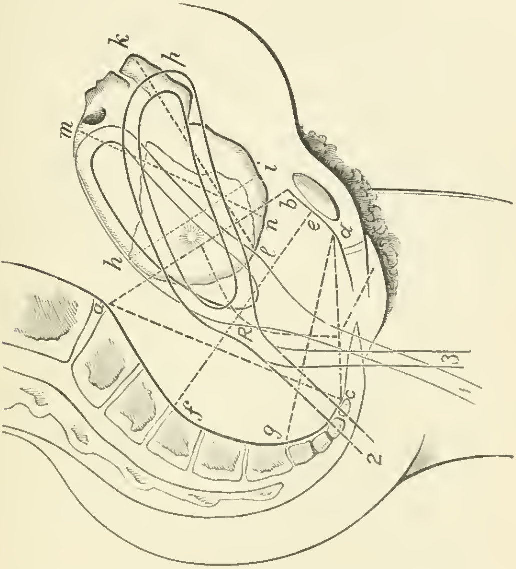

FIG. 2.

1. Hodge forceps as usually applied high up with liability to slip.
2. Hodge forceps with blades correctly applied; the shank would pass through the coccyx.
3. Hodge forceps with a pelvic curve in the shank ; the latter will not interfere with the perineum.

Measurements of Pelvis.—*a*, *b*, Antero-posterior diameter (conjugate) of superior strait (Schroeder). *c*, *d*, Antero-posterior diameter (conjugate) of inferior strait, $3\frac{6}{10}$ inches (Schroeder). *e*, *f*, Distance from middle of symphysis to upper margin, 3d sacral vertebra, 5 inches (Schroeder). *g*, *d*, Distance from inferior angle of sacrum to apex of pubic arch, $4\frac{1}{2}$ inches, (Schroeder). *b*, *d*, Depth of cavity behind symphysis pubis, $1\frac{1}{2}$ inches (Ramsbotham). *a*, *c*, Depth from sacral promontory to top of coccyx, $5\frac{1}{2}$ inches (Ramsbotham). Inclination of pelvis in recumbent as in upright position (Schroeder), 54.5°. *a*, *b*, *d*, Angle of symphysis pubis, with conjugate diameter 100° (Schroeder).

Measurements of Forceps (*Hodge*).—*o*, *p*, From joint to extremity of blade, 9.5 inches. *o*, *r*, Length of parietal shank, 3.5 inches. *p*, *r*, Length of blade. 6 inches. Breadth of blade, 1.8–1.7 inches. Breadth of fenestra, 1.1 inch. Perpendicular elevation of point *p*, when instrument on horizontal surface, 3.4 inches.

Dimensions of Fetal Head (*Meigs*).—*h*, *i*, Occipito-bregmatic diameter, $3\frac{1}{2}$ inches. *k*, *l*, Occipito-mental diameter, $5\frac{1}{2}$ inches. *m*, *n*, Occipito-frontal diameter, $4\frac{1}{2}$ inches.

in the seldom or never occurring directly antero-posterior position, because this can be better expressed in a "flat" drawing. The forceps is shown applied to the head in two ways, the faulty one, in which it is likely to be placed, and the desirable one. In the former, the blades of the instrument are seen to grasp the flat and sloping sides of the sinciput, off which they will glide when strong traction is made, as over the converging sides of a wedge.

In the latter, a firm hold upon the occiput would be obtained, but such an application is resisted by the interference of the projecting coccyx with the necessary depression of the handles of the instrument. Figure 3 is designed to show how even more of the volume of the head is beyond reach for the adjustment of the forceps when flexion is incomplete.

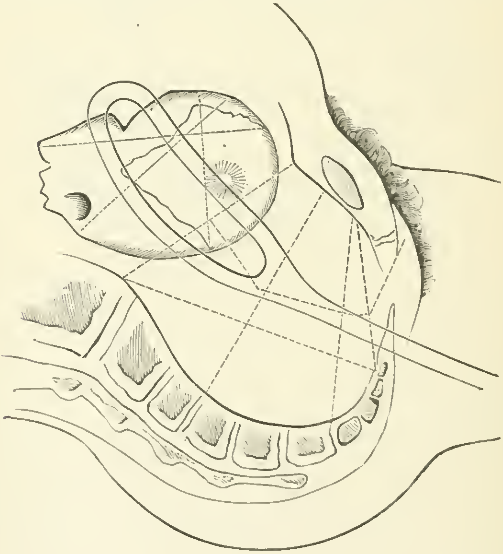

Fig. 3.

It may, however, be objected to the above demonstration that, when the head lies in an oblique or in the transverse diameter of the pelvis, and the forceps are applied with reference to the sides of the child's head, the shank of the instrument will not impinge against the coccyx, but will correspond with a shallower part of the wall of the bony cavity. The criticism is just, but in practice the undilated and not readily dilatable condition in which the neighboring soft parts are often found proves as formidable an impediment to what is desired as the more rigid coccyx.

Now, believing that I do not greatly exaggerate the difficulties in question, of obtaining a secure hold with the forceps upon the highly situated head, I venture to advocate a modification in the fashion of the instrument to better adapt it for use in such unfortunate cases as I have mentioned; namely, the extension of the "pelvic curve," accepted for the blades, to the shank of the forceps. A glance at the diagrams will suggest how easily such a change would keep the shank out of the way of the obstructive resistance of the pelvic walls.

In using an instrument thus modified, the extracting force must of course be applied perpendicularly to the handles, as nearly as possible in the axis of the superior strait. After the head has entered sufficiently deeply into the pelvis, the forceps with the curved shank could be removed and an instrument of the ordinary kind substituted, that advantage might be taken of the greater mechanical power afforded by the straight shank of the latter. Among the great variety of forceps which have been devised, one instrument is to be found with the curve in the shank as recommended. It has perhaps been lost sight of because of its general inferiority to those now in constant use. But I have imagined that I would not be trespassing too much upon your time in attempting to establish for it a superior claim in a special case, since, if I succeeded, I should have restored to our obstetric armamentarium an additional means to supplant the dreadful alternative of embryotomy.

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A STUDY ON THE ETIOLOGY OF PUERPERAL DISEASE.

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WHILE the knife of the pathological anatomist has in the immediate past thrown a flood of light upon theories built solely upon clinical observation, essentially modifying these theories in many ways and giving them a scientific basis, the physician of the present day has become fully awake to the importance of a more thorough and lucid understanding of the morbid processes known to pathologists, and knowing these processes, to the necessity of following up the line of attack upon disease naturally suggested by a deeper and surer insight into the etiological forces of pathology. Although as yet there exists no unity of faith or universal agreement as to the conception and signification of these discoveries, such a result may certainly be expected in the not far-distant future.

The practitioner, who rarely has a direct opportunity to unveil the mysteries of truth, is still entitled to investigate the facts and the theories founded upon them, and to see whether the well-known clinical symptoms can be explained thereby in individual cases, and whether modern views agree with the familiar post-mortem appearances.

This is the motive which has induced me to choose this theme, of all others, upon which so much has been written and said, for the subject of my remarks.

Taking the puerperal diseases as a whole, I shall sketch their pathologico-anatomical features, and endeavor to ascertain how far the lately-acquired facts and the theories based upon them may be explained by clinical experience.

All affections occurring during the period immediately succeeding delivery must be considered as puerperal, except injuries, wounds, syphilitic processes, the infectious diseases, and those due to parasitic causes;—all affections, therefore, which, though they occur in consequence of the puerperal state, may either be the result of the puerperal act itself, or not a natural sequence of it, because they might be induced by other external influences, which would not, however, have made their appearance if the genitalia had not been in the puerperal condition.

Puerperal fever is to be understood as the septo-pyemic process resulting from the absorption of infectious putrid elements by the blood-vessels and lymph-channels of the wounded surfaces of the lying-in woman, with or without localization in other organs.

Kiwisch, as also Förster, believed puerperal fever to consist in a miasmatic infection of the blood.

Seifert maintained that in a certain class of cases the disease arises from pyemic processes dependent directly on the anemia of pregnancy, and, secondarily, on the influence of a *genius epidemicus*.

Virchow and Treitz declared the genitalia to be the seat of origin of the disease, and believed that the changes incident to the act of childbearing play the most important part in the morbid processes. Clinicists, like Jaksch and Semmelweiss, explain the origin and spread of puerperal fever by direct infection from one person to another.

Mayerhofer made the first unsuccessful attempt to demonstrate that the disease was due to the presence of microcosms; for, while he undoubtedly found vibriones in the lochia, Haussmann proved that these parasitic elements also occur in the lochial secretion of healthy women.

In 1872, Coze and Feltz published the results of their experiments, extending over a period of six years, which led them to conclude that in cases of uncomplicated pyemia—in which the chief symptoms depend upon embolic processes—no bacteria are found in the blood of the patient; but that in septicemia and in puerperal fever they are present in great numbers. They therefore excluded those cases of fever in puerperal women, in which no bacteria were found, from the category of puerperal diseases. Birch-Hirschfeld examined the blood of a very great number of women ill with puerperal fever without finding bacteria in all cases.

Hüter, in opposition to Coze and Feltz, declares that septicemia originates from the presence of disorganized and putrid material; while in pyemia the micrococci are the cause of the disease.

Klebs opposes the separation of the two diseases, and with Waldeyer—who at first cautiously expressed himself that the parasites certainly tend to aggravate the puerperal affection—Heiberg, Orth, and others, has endeavored to define the puerperal process as a schistomycosis (*σχιστος*, a cleft, and *μυκης*, fungus). The researches of Klebs, who is the most earnest and indefatigable defender of that theory, must certainly be looked upon as the first thorough investigation of the nature of septic mycosis.

Klebs, having previously considered the parasitic nature of septic surgical fever as incontrovertibly established, naturally, in consequence of his tolerably extensive investigations, looks upon puerperal fever as an analagous process, and, therefore, a schistomycosis. Yet, both Ranke and Birch-Hirschfeld state that numerous bacteria were found by them in the secretions and the pus from wounds which had been treated by Lister's method, in subjects entirely free from febrile excitement, as well as in wounds treated by the open method, in the pus of which bacteria are nearly always present.

Again, in abscesses occurring spontaneously in various parts of the body, masses of bacteria may be found, and give rise to no symptom whatever. These facts justify a doubt as to the soundness of the theories based upon the appearance of these minute bodies, and their agency in the production of disease.

Without now speaking further ot the etiology of puerperal fever, I will commence with the familiar physiological conditions of the genital organs after childbirth, and endeavor to harmonize the views drawn from clinical experience with the results of pathological investigation. I will then proceed to discuss the latest theory of the etiology of the disease.

The metamorphosis of the mucous membrane of the uterus into the decidua during pregnancy, and its entire desquamation with epithelium and glands at the time of labor, leaving the whole endometrium, except in the cervix, denuded, was proved by Heschl (*Wiener Zeitschrift*, 1852), and later confirmed by Treitz in his lectures. In the cervix, two-thirds of the mucous membrane remains, and the arbor vitæ are plainly distinguish able after delivery. The denudation of the corpus uteri leaves it with but a thin layer of connective tissue covering the muscularis.

Further, post partum the placental site is lacerated, and the mouths of the uterine sinuses gape frequently wide enough to admit the little finger.

Rokitansky denies that the mucous membrane is thrown off in the form of the decidua, and is of opinion that at least one layer of it is retained post partum. Scherer concludes, as the result of his clinical and microscopical examinations of the lochia (*Heidelberg*, 1845), that the mucous membrane is destroyed, because no trace of mucin could be discovered in the secretions until after the fourth day, and then only when the mucous membrane had actually been reproduced.

Birch-Hirschfeld, supported by the investigations of Friedländer, believes with him that only the outer portion of the cell-layer of the decidua is cast off; while the inner portion, with the entire glandular layer, covers the whole endometrium, including the placental site; that the cellular layer is nevertheless destroyed through fatty degeneration during puerperality, and discharged with the lochia, and the glandular layer thus exposed forms the continuous epithelial layer of the intra-uterine surface, through involution of its interstitial connective tissue. Klebs believes that, if the muscularis of the corporeal endometrium is laid bare or is covered only by a villous coating containing no glands, a destruction of the substance of the mucous membrane, which at least does not occur under normal conditions, has taken place.

The value and scientific exactness of the recent examinations of Leopold cannot be denied, yet the number of cases at his command for this purpose was so small, in which he was able to demonstrate a short time post partum that the layer of mucous membrane lying next the vascular network is retained, that we are unable to look upon his specimens as illustrating constant normal conditions; therefore, so long as an equally large material does not afford sufficient proof to the contrary, we must accept as conclusive the statements of Treitz, whose very extensive investigations in the Lying-in Hospital at Prague, where most ample opportunities were afforded him by frequent severe epidemics of puerperal fever which prevailed there, appeared to show that, as a rule, the mucous membrane of the uterus is entirely exfoliated during the puerperal state, and the intra-uterine surface then presents a raw layer of freshly denuded connective tissue. This raw surface, then, upon which numerous veins open and gape, is to be considered as analogous to any other fresh wound of the connective tissue; except that in this case, the vaginal walls being in apposition and the uterus contracted, the wounded surface itself is not open to direct inspection. It is nevertheless susceptible to any and all the accidents which befall such wounds. Every wound bleeds at first, and when the vessels have contracted and become closed, there is exudation of serum which permeates the meshes of the connective tissue, and is here called the lochia. This discharge continues precisely so long as it would under normal conditions in any other wound, *i. e.*, until new vessels have been formed and the wound has been closed externally by connective tissue.

Granulations must also form upon the raw surface of the endometrium, which are simply elongated vascular loops together with newly-formed connective tissue, which at first are loose and soaked in serum, gradually become firmer and more compact, and finally grow into a new mucous membrane, which, however, differs from other mucous membranes in that it has no muscular layer, but only a vascular network with old and new connective tissue and epithelium, *i. e.*, moist epidermis. As the vessels are closed by connective tissue, the flow of serum gradually diminishes and the wound heals.

This raw surface it is, which in the lying-in woman is first and most frequently affected by disease, in precisely the same manner as other wounds, with the addition of other factors and promotors of disease, such as deep lacerations of the external os, extending into the muscular tissue (which, it is true, do not occur of necessity and therefore are not the rule; yet, as they do occur, they make the wound deeper and give it an equal significance as other deep wounds); severe bruising from the hand of the accoucheur or from the introduction of instruments, pieces of decomposing retained placenta, or blood clots, etc. This raw surface upon the internal wall of the uterus may, like the surface of any other wound, depart from the normal and become diseased:

1. Through any irritation which is followed by a marked hyperemia. The endometrium becomes much swollen; there is pronounced injection, and when, as often happens, small vessels are ruptured, it is tinged with extravasated blood. Should a sufficient number of vessels, or a single large one, give way, an extravasation into the young connective tissue takes place, and the blood appears externally in the shape of unexpected bloody lochia at a late day.

2. The wound may become covered by plastic exudation which is of firm consistence, the fluid portion having drained off, and then presents the appearanee of grayish, infiltrated tissue, which color, however, deepens to reddish from the admixture of blood, when the deposit is very thick. If these deposits be detached or scratched, the inflamed surface is exposed and fresh granulations are found lying immediately upon the muscularis.

If the uterus now contracts, individual patches of deposit swell and present inequalities or folds, which induced Rokitansky to consider this process analogous to that taking place in the intestine in dysentery, where, however, the mucous membrane is not destroyed.

3. When the exudation is very extensive, suppuration takes place, which persists long after the exudation has disappeared. The condition is that of bare granulations covered with a superficial coating of pus.

4. The wound remains pale and flabby, the connective tissue is of a grayish-brown color and can easily be peeled off. No new vascular loops or new granulations are formed; and although this condition is held by some to be normal, it is no more so than that of a wound which remains pale and atonic. Treitz has called this undoubtedly abnormal condition, anemia (Erblassung) or failure of reaction. The result is that the lochia persist long after the time when they should have ceased had the case been a normal one. Such patients, though free from febrile reaction, do not recover their strength, unless constitutional tonics be at once given and topical astringent applications made.

5. If this atonic condition of the wound is of long duration, its base may undergo ichorous or putrid degeneration, and true gangrene ensue, which condition is announced by the decom-

position of the discharge, which is changed to a transparent pulp having the peculiar gangrenous odor, and is variously discolored, according as the gangrene is more or less complete, from a brownish-black to green. Inasmuch as all circulation is stopped, the muscularis and connective tissue are completely deprived of nourishment, and if the gangrene progresses so far that the tissue dies, a mass of greenish-brown pulp is formed, which condition is generally designated as croupous or gangrenous endometritis.

However different in character and symptoms simple inflammation and septicemia are, they are here often merged into and combined with each other. If it be inflammation which first presents itself, then successively reaction, exudation, or septicemia occur; in the first case the result is resolution, in the latter septicemia or gangrene. Again, if in the beginning there be a passive septic condition and this improves, the product also loses its injurious qualities, the exudation gradually becomes plastic, injection and inflammation then succeed, and resolution follows. Both inflammation and sepsis are most pronounced in those spots where the injury to the uterus was greatest, *i. e.*, the external and internal orifices (which are crushed between the child's head and the symphysis pubis) and the placental site. At this latter point the lacerated veins in the normal puerperal state are first closed by thrombosis or by contraction of the uterus, and then sealed by inflammatory formation of new connective tissue. The exudation either occupies the whole vein for some distance or is limited to the thrombus only. But when the inflammation of the endometrium assumes an abnormal course and is excessive, it can easily be imagined that the same process will extend by continuity also to the veins, and that the exudation will take on the same metamorphosis here as there. It generally undergoes suppurative change, and the beginning of the veins is either filled with pus, or if a thrombus already existed there, its detritus mixed with pus is found. The sepsis of the endometrium spreads to the veins and their contents both by contiguity and continuity, and these contents, whether they be fluid blood or a previously formed thrombus, are decomposed and changed into a black mass; for if we add decomposing material to fresh blood, it will rapidly decompose. The walls of the veins always become infected and necrotic from contact with their decomposed contents, their mouths gape and their tissue is transformed into a yellowish slough; the walls of the vessels, being firmer than their contents, of course resist the destructive action longer. If this process is to result in resolution, a thrombus must form behind the diseased part and a reactive inflammation ensue which effectually closes the veins. The same process above described as being found in the beginning of the uterine veins, often extends to other large veins; those of the broad ligaments, the iliac vein, the vena cava ascendens, having been known to be completely filled with a thrombus or with pus or disorganized fluid blood.

The adjacent parenchyma then becomes injected and edematous, and when exceptionally this condition does not immediately end in death, it may become chronic, the veins remaining impermeable and thickened, together with the surrounding connective tissue; or, in some rare cases, recovery may still ensue and the veins again become patent.

Concerning the causes which bring about this process and particularly the order in which its various stages make their appearance, opinions greatly differ. The thrombosis, since it is not mechanical in character, must result either as the consequence of inflammation or infection. If inflammation were the only cause, then it should be demonstrable at the same time as the thrombosis, which, according to Treitz, is not always the case, and should therefore no more be made the rule than that thrombosis is the constant cause of the inflammation; for very often no inflammation at all accompanied the formation of the thrombus, but the latter frequently even limits the progress of the inflammation and thereby the whole process. *The extension of the process to the distant portions of the veins can only be accomplished through the agency of decomposed fluid blood*, which also destroys the thrombi, or through infectious substances which are taken up from the wound into the blood-vessels, and may come into play at any portion of the venous tract. What decomposes the blood in one case, and does not affect it in another; what the nature of the infectious material is which exerts an influence so fatal to one lying-in woman and to another is harmless, despite equal time and place, I am as yet unable to determine.

The modified schistomycosis theory, according to which the bacteria are the carriers of an infecting substance, the nature of which is as yet unknown, is, however, not excluded by these logical inferences.

A similar process goes on in the lymph-channels as in the veins, the lymph-vessels of the uterine wall itself being the first affected, the process often extending to the retro-peritoneal lymphatics, and even to the thoracic duct, which also become inflamed, and are usually filled with pus. The walls of these canals dilate, tear, and suffer necrosis much more rapidly than those of a vein, because they are thinner; the surrounding connective tissue is then found edematous, and frequent interstitial abscesses present themselves. These abscesses are often of a mixed character, formed by pus both from veins and lymphatics, but not unfrequently from one of these sources only. The abscesses formed from venous pus are generally larger than those owing their origin to the purulent contents of a lymph-vessel, and contain a dirty-brownish pus; while the lymphatic abscesses are smaller and filled with thick yellow pus.

The lymphangoitis is frequently accompanied by lymphadenitis, since the pus is carried into the glands, and there remaining, excites inflammation, in the same manner that gonorrhea and syphilitic ulcers produce buboes.

Any one who has seen many autopsies of women dead of puerperal fever will have observed in some cases lymph-vessels, leading from the uterus to the nearest lymphatic gland, quite free from any sign of disease, yet the portion lying beyond the gland filled with pus. There are cases even where no pus at all is found upon or in the endometrium, and yet it occurs in the distant lymphatics; and the disputed question of how this lymphangoitis originates was not fully decided until recently.

Some believed that lymph thrombi are formed and that inflammation is excited by their mechanical irritation. If such a theory were the true one, we should always find coagulation to a certain extent associated with the product of the inflammation, the pus, which, however, is not the case.

Others supposed the pus to be absorbed from the uterus, which probably often occurs, but those cases are not explained thereby, in which the quantity of pus in the lymph-vessels is very considerable, and very little or none at all is found in the endometrium or in the walls of the uterus; or those where the mouth of the vessel is closed by inflammation, and as a consequence no absorption can occur, and yet the process continues to extend. In these cases we must necessarily believe that pus is formed in the veins and lymphatics; and that the modified schistomycosis theory has a logical confirmation here also, cannot, in the absence of other plausible etiological factors, be denied.

Another question is this: Why does the inflammation so frequently and extensively spread to the veins and lymphatics?

It occurs *ex contiguo* sometimes, but not always; for then all the tissues adjacent to the endometrium would be infiltrated, which is not the case. *Ex contiguo* and *per continuum*, the inflammation spreads to the walls of the uterus, the vagina, the Fallopian tubes, the ovaries, and the peritoneum; and although this would fully include the veins and lymphatics, the question still involuntarily arises, Why does not a similar inflammation affect the arteries?

From a pathological, as well as a clinical stand-point, I think it cannot be denied that the centripetal movement of organic matter, increased as it is by the act of parturition, is certainly coactive in the extension of the inflammation from the uterus toward the central organs; and consequently the extension of the phlebitis, as well as the lymphangoitis, must take place from the original wound, not always, as I have shown, by thrombosis or absorption of purulent matter, but through infection.

Indeed, we find phlebitis and lymphangoitis of analogous character in otherwise healthy persons who are the subjects of any kind of wound or injury, and in whom the wound, from some cause unknown to us, suddenly secretes poor pus or putrefies, or in whom the wound is infected with septo-pyemic, or other material.

The affection of the endometrium, which is communicated to the veins and lymphatics, may, in like manner, extend to the neighboring organs. Most frequently the muscular wall of the uterus is thus affected, and to an endometritis is added a metritis.

The inflammation spreads to the connective tissue, and appears in the muscularis in isolated patches. Separate bundles of muscular fibres and the intervening connective tissue become injected, inflamed, and necrotic; abscesses form, which rarely terminate in resolution or inspissation, but much more frequently burst either internally or externally. These abscesses form most freely, of course, where the inflammation is most frequently found, *i. e.*, at the external os and the cervical portion, where deep lacerations have occurred. These abscesses and cases of partial metritis do not, however, always occur by means of the extension of the inflammation of the connective tissue, but often also from phlebitis and lymphangoitis.

The sepsis in the majority of cases extends from layer to to layer, and is generally not limited in its progress, affecting first the internal layer, and extending thence to the layer next to it, and so on.

The connective-tissue cells die in this process, and the uterine wall is found putrescent in various degrees, and occasionally necrotic down to its peritoneal covering.

The inflammation of the interior of the uterus is often propagated to the vagina by the discharge of the lochia over its surface; still it is possible that the vagina also takes on the disease primarily, in consequence of the same influences which produce it in the uterus. Generally the inflammation of the endometrium is the primary, and that of the vagina the secondary affection, and especially when lacerations or excoriations have been produced during the puerperal act, particularly injuries to the fossa navicularis, does the process going on in the uterus spread in all its forms to these lesions.

We then find croupous and diphtheritic infiltrations or gangrenous and necrotic patches; or, the vagin may be perforated, vesico-vaginal and vagino-rectal fistulæ may develop; or, finally, these lesions may cicatrize and heal by inflammatory reaction, and stenosis or even entire closure of the vagina may take place.

The puerperal affections of the endometrium and the uterus itself are frequently communicated to the Fallopian tubes by continuity of surface, purulent salpingitis being present in nearly all cases of puerperal endometritis or metritis, although the pus does not so readily decompose, on account of its comparative exclusion from the air.

According to Treitz, this salpingitis is the most frequent cause of puerperal peritonitis, which is induced by the escape of pus from the tubes into the cavity of the peritoneum; for he believes that the tubes in their normal condition are always open, even during pregnancy, and are only closed when such closure occurs by inflammatory adhesion after parturition. Should the tubes, from any cause whatever, have become closed at some previous time, then impregnation could not occur.

The morbid process extends from the endometrium through the uterine wall to the peritoneum in the way that the outer uterine wall is first affected, and perimetritis produced, from which springs a general peritonitis.

The peritoneal exudation therefore almost always conforms in character to that within the uterus; hence, we have purulent peritonitis when the endometrium is the site of purulent inflammation, and putrescent exudation accompanying septic endometritis.

The peritoneum being so extensive an organ, the quantity of exudation is frequently very great, amounting to from ten to twenty or more pounds, enormously distending the abdomen, and literally suffocating the patient.

The exudation is sometimes purulent and whey-like, rarely plastic and coagulable or fibrinous, and when it is so, it has the appearance of boiled milk or scrambled eggs. As a rule, it is decomposed, foul, with a scorched odor, and is then always the accompaniment of the septic form, and causes death by its bulk, as mentioned above; or by perforation, when the woman suddenly becomes weak, shivers, and dies; or from paralysis of the intestinal canal, when the patient, after experiencing unbearable pain, all at once feels entirely rělieved, and while still in full possession of her mental faculties, is already abdominally dead. When death occasionally does not occur early, the exudation undergoes still further metamorphoses; it partly becomes purulent, and immense abscesses are formed within the abdomen, such as are not met with in any other form of peritonitis, causing death *per se*, or from perforation; or the exudation may become inspissated or calcareous, forming solid tumors; or, finally, in the most favorable cases, it may be absorbed, a process generally resulting in closure of the Fallopian tubes and consequent sterility. Although many gynecologists claim that this peritonitis results from mechanical irritation during childbirth, this does not seem to be the case, since experience teaches that the disease very frequently does not appear until ten to fourteen days, and even longer after labor, and that the peritoneum may very roughly be treated without giving rise to such severe symptoms. It is only when the circulation in the peritoneum is interfered with, which never occurs to such a degree through or during the puerperal act, that the conditions become so grave; and, in my opinion, the schistomycosis theory also explains all these phenomena better than any which has yet been advanced.

Through the agency of the peritoneum and the Fallopian tubes—here, too, from continuity of surface—the morbid process spreads to the ovaries, in which the inflammation attains a degree not produced by any other disease. The ovaries are very much swollen, reaching the size of a fist. The stroma becomes so loose and soft that it may often be crushed between the fingers; the tunica albuginea bursts in order to permit this enlargement, and as ovaritis scarcely ever occurs without peritonitis, both ovaries are commonly affected and enveloped in exudation. If death does not occur in the early part of the disease, abscesses form in the ovaries, which extend through the tubes into the broad ligaments, and, of themselves, cause death, or the ovaries are destroyed by the inflammation.

The pelvic connective tissue is also affected by contiguity, and the puerperal act, if accompanied by any considerable bruising of the intrapelvic tissue, may exercise a marked influence in aggravating the inflammation. Sloughing of this tissue then occurs, or abscesses form, which rarely heal, and then with great difficulty; or, as is frequently the case, the pus, not finding vent, undergoes decomposition, and thus causes death.

In other cases still, the inflammation extends to the pelvic cartilages, chiefly to the sacro-iliac synchondroses and the pubic symphysis, which are transformed into abscesses, that may become gangrenous, and induce necrosis of the adjacent bone. The majority of these cases terminate fatally, a favorable termination is very rare, and when it does happen, there is almost sure to be anchylosis. Undoubtedly, the mechanical irritation produced by childbirth has a great influence on the occurrence of disease in the cartilages ; but the neighborhood of the seat of the puerperal disease is also a prominent factor. The inflammatory processes in these cartilages undoubtedly owe their origin to local and not general causes, a view which is supported by the frequency of inflammation of the pelvic cartilages only during puerperal disease.

I shall merely mention the localization of the septo-pyemic puerperal processes in the serous and mucous membranes—especially the membrane of the digestive canal—in the synovial cavities, and the implication of divers organs of the body by metastatic processes, as these phenomena are common to all diseases of a septo-pyemic character.

In former times, men spoke of miasm and contagion, without knowing what they where or whence they came, and indulged in numerous hypotheses.

If, in more recent times, we are offered, instead of obscure suppositions, theories, based though they be only upon microscopical examinations, we should not reject them at once, but take them, as it were, upon probation, and put them in the crucible of clinical experience, test them, and seek to discover whether and how far the known clinical phenomena are explained by them more satisfactorily than by the old theories.

The mooted question of to-day is this: What is the infecting agent in puerperal fever? Is it a chemically changed and disorganized product? Is it a vegetable parasite, the round bacteria ; or is it a putrid substance and bacteria together?

A French author, Lacassagne, as the result of experimentation, came to the conclusion that the bacteria are neither miasm nor virus, but the agents of putrescence. He says, that the infusoria are not the carriers of the germs of specific diseases, but that they are the general cause of the same morbid symptoms, playing different roles in different diseased conditions.

According to Beale, the disease-producing bodies are not lifeless particles, not germs springing from fungi or other organisms, but subtle poisons originating in the living matter (bioplasm) of human and animal bodies.

Samuel, as the result of his researches upon the nature of septic infection, has divided the morbific agencies into three classes:

1st. The specific septic influence is exerted by a volatile substance having its origin in the union of sulphurous and ammoniacal elements.

2d. The progressive action is the work of the bacteria, but in the tissues in which they multiply they produce the symptoms only of inflammation, never putrescence, so long as they are not the carriers of septic substances.

3d. If the fluid be deprived of its septic character and its bacteria by several hours' boiling, and then filtered, it still possesses phlogogenous and pyrogenous properties, and thus still holds in solution substances which are not transient or organic, but chemical, capable of inducing slight inflammation.

Max Wolf was unable to determine, from his experiments with bacteria taken from septic secretion from wounds and from peritoneal exudation in puerperal fever, that the pernicious effects were exclusively due to the bacteria. A series of experiments were made by Hiller on cutaneous and subcutaneous wounds in rabbits and dogs, and by hypodermic injections on himself, to which he applied a fluid containing bacteria twice daily, without producing the slightest general or local effect; the same result was observed in healthy granulating wounds. But the filtrate of septic fluids, and the unfiltered detritus of fresh wounds, induced all the well-known general and local effects of septic infection.

Panum holds that, according to his researches, there is present in putrid fluids a specific chemical substance, soluble in water, which, when taken into the blood, excites a group of symptoms which are known as putrid or septic infection. He claims, however, that this theory does not conflict with the doctrine of fungous pathogenesis of the disease, for we may assume that this chemical poison is generated by the bacteria.

As the chief exponent of the schistomycosis theory, I will only mention Klebs, whom his numerous anatomical examinations have convinced of the direct sequence of the migration of schistomycetic elements and the inflammatory processes, and who unreservedly accepts the relation of cause and effect between them, verifying in this case, by his experiments, the old saying, *post hoc, ergo propter hoc.*

Since, however, numerous examinations of the blood of puerperal-fever patients has failed to detect the presence of bacteria, these patients, in the very great majority of cases, being women with genital lesions during labor, in whom the disease did not manifest itself until between the second and eighth day after confinement; since bacteria have been found in abscesses caused by external influences, or of idiopathic origin, with intact external covering, without producing general disease —for these reasons I believe the conclusion logically justifiable, that the bacteria *per se* alone cannot be the cause of puerperal infection.

The secretion of the wound alone, even when it becomes purulent, does not produce puerperal fever, for we often have purulent endometritis, parametritis, and peritonitis without it.

But since the puerperal women only become septicemic after the putrid and septic secretion of the wound has remained a long time in contact with the tissues, and on the other hand, when the recently introduced antiseptic treatment is adopted, the morbid process is arrested; and further, since the afferent arterial vessels are generally free, but the other vascular channels in which the reflux after labor is greatly increased, are really the propagators of the disease, I believe myself justified in the conclusion that the *agent of infection is the putrid and decomposing secretion of the wound.*

The question whether the secretion of the wound is decomposed, and rendered infectious only by chemical action, or whether it happens through the agency of bacteria acting either as a ferment or as carriers of a known or unknown poison, I will not at present discuss, since I intend myself at a future time to institute researches for the elucidation of this problem.

FOOD AS A REMEDY FOR AGALAXIA.

BY
E. CUTTER, M.D.,
Boston, Mass.

THE late Prof. Chas. E. Buckingham once asserted his ignorance of any adequate cause of the too prevalent deficient action and secretion of the human mammary gland. The term agalaxia really means an absence of milk, a condition of entire abolition of the function of the gland. In this paper we would have the term embrace also the cases where the lacteal secretion in nursing women is scanty and insufficient for the infant. It is a subject worthy the attention of any philanthropist, as nothing excites one's commiseration more than this deprivation inflicted upon helpless, innocent babes. It seems like a robbery of their rightful natural food. The writer then would offer no apology for calling attention to *one* means, which he thinks may be capable of ameliorating this condition in a certain measure.

In the prosecution of bovine vaccination it was noticed that dairymen increase the quantity and quality of their cows' lacteal secretion by feeding their stock on bran, shorts, and meal, chiefly maize. These procedures are largely and successfully practised. In other words, it has proved good practice in the management of dairies to supply the ephitelial cells of the mammary gland that absorb materials from the blood of the cow, and elaborate them into a secretion that we call milk, with the food elements that are found in the tegumentary or cortical portion of the grains of wheat. The result is an increased production, and of course an increased income to the dairymen.

The writer asked himself the question whether *women* might not do better by their offspring by feeding upon similar food. True, the bovine is graminivorous, but man is omnivorous, so that the distinction might not stand in the way.

Moreover, it was also queried whether, as the cows did so well by feeding on the portions of the wheat which were rejected in making flour, nursing women might not do as well if they should subsist on cereal food that had not been subjected to an abstraction of seventy-five per cent of its mineral ingredients.

If the rejected human food, added to the ordinary diet of dairies, has increased the products, would the retention of the rejected portions have a similar effect upon the supply of food for nursing infants?

The following cases are offered as a partial reply of a practical nature to this query:

CASE I.—A mother of eight children experienced a want of sufficient secretion of milk with her last three or four children. Her age was 40 years, and her parentage American.

During her pregnancy with, and after the birth of her *ninth* child, her diet was varied from its usual character by excluding flour, and including the use of wheat and maize unbolted, but ground coarse or fine, as the case might be. She partook of animal food freely and ordinary vegetables. She had a plentiful supply of milk that continued for twenty-one months—a longer period than for any of her preceding *eight* children.

Under the circumstances, this trial proved more than satisfactory. The child was thoroughly nourished, and successfully passed through a peculiar sickness, namely scarlet fever, followed by a paralysis of the throat, which caused the child to choke after falling asleep. It would wake from asphyxia, and then fall asleep to repeat he same procedure. This state of things lasted three weeks. With a deficient alimentation, it was thought that nature would have succumbed.

CASE II.—A woman, 34 years of age, married, was in consumption. She bore a child. At its birth, she was advised not to try to suckle it, as she would so soon be obliged to wean it. Trouble would be saved, it was urged, by commencing immediately with the bottle. The advice was persisted in for a time, but the mother indignantly refused it, by saying that so long as she had so much of a supply of milk as to render it necessary to throw it away, she thought it wrong to wean the child. The lacteal secretion was copious for a space of eight months, when the mother died from the effects of imprudent exposure to the inclemencies of winter weather. The diet in her case was one that embraced the same general principles as laid down in Case I.

CASE III.—Mrs. B., aged 35, with her fourth child lived mostly upon a diet of oatmeal combined with ordinary articles of food. She had a liberal supply of milk, and attributed it to the oatmeal. In this case, her food included the cortical portion of the grain that corresponds to the shucks or bran separated from wheat.

There are five grains, namely, wheat, rye, barley, oat, and maize, each and all sufficient for the purpose of supplying an aliment that contains elements enough to sustain life in health, and enough, in the writer's opinion, to make milk.

It is the excess of starch in flour, and the abstraction of three-quarters of its mineral elements, that, in the writer's judgment, cause the agalaxia generally observed.

CASE IV.—Mrs. R., 28 years; three children in four years. With the pregnancy of the last child she expressed a decided fear that she would be unable to suckle her unborn infant. This fear was based on the experience with the second child.

At the writer's advice, she adopted a mixed diet, composed of animal and vegetable food with the unbolted cereals, during the last three months of her pregnancy and afterwards. There was an abundant secretion during lactation.

CASE V.—Mrs. F., 35 years, first child. During and after pregnancy fed on the mixed diet. The supply of milk was unusually full and free.

This list is not deemed sufficient to decide the question. To do so requires a large range of experimentation. Still the writer thinks it is sufficient to justify his calling the attention of the profession in this direction, and therefore prepared this merely suggestive paper.

To make out a complete chain of observation requires many links. The writer has supplied a few links. Will the reader contribute another?

13 TEMPLE STREET, BOSTON, Oct. 11, 1877.

DILATATION OF THE UNIMPREGNANTED OS UTERI WITH VAGINAL GLASS OR SOFT-RUBBER PESSARIES.

BY

E. L. DRAKE, M.D.,

Fayetteville, Tenn.

IN an article published in the *Phila. Med. & Surg. Rep.*, for 1876, I called attention to the value of the tampon in hour-glass contraction of the uterus, and also in effecting dilatation of a contracted os. It is a matter of frequent observation with me that the presence of a foreign body, resting against the os for a certain length of time, a soft-rubber pessary, for example, will bring about sufficient dilatation of it to admit the tip of the finger. Further, when the uterus, from overweight, or laxity of support, presses against the perineum, or from other displacement the os is fretted against the vaginal wall for some time, characteristic changes are set up, namely: a hypersecretion of mucus, a softening of the tissues, and a considerable degree of dilatation. Thus, nature in these cases overcomes a stenosed cervix and contracted os with considerable certainty, and thereby promotes a free menstrual discharge, unless too much obstruction exists from a flexure at the internal os. The pressure of any foreign body against the os will stimulate the menstrual flux, and so become available in the treatment of amenorrhea, which is often only a form of dysmenorrhea.

Now, I ask gynecologists, who are divided between amputation, incision, and rapid dilatation of the cervix, to the preliminary trial of a soft-rubber air pessary, or a tampon covered with rubber dam—an excellent cheap pessary which any one can make—which is to be worn for two weeks during the intermenstrual epoch. At the end of that time they will find a marked degree of cervical softening and dilatation of the os, and also a freer menstrual discharge. The alterative action seems to extend to the inner os also, for I have often noticed that the sound passes more readily to the fundus after the use of such a pessary. It should be removed several days before the expected period or it might cause an excessive flow, as I have seen it do in one instance, or light up an attack of pericellutitis. I use the concavo-convex rubber and glass instruments or a small tampon covered with rubber dams, as circumstances warrant.

The following case recently treated by this method I regard as a crucial test of the principle involved:

It was a typical case of conoidal cervix and pin-hole os. The patient's sufferings were extreme, lasting nearly through the intermenstrual period, and leaving her in a wretched condition to withstand the succeeding ones. The sympathetic disturbance was great, manifested in spasmodic cramps of the stomach and torturing headache, which were barely held in abeyance with excessive doses of chloral and morphine. She had been a sufferer for years, dating from an abortion. I used with her a small glass concavo-convex pessary, and have had no occasion to visit her for months, whereas before my visits were required regularly at her periods. The last time I examined her, the os would admit the tip of the finger.

I find more use for this procedure in young married females to whom operations with the speculum, tents, and cutting instruments are obnoxious for obvious reasons. I prefer the glass pessary as being more cleanly and effective, and requiring less attention.[1]

A NEW GYNECOLOGICAL TABLE.

BY
JAMES R. CHADWICK, M.D.,
Boston.

(With three woodcuts.)

THIS table is offered to the profession as a substitute for the unsightly, often ill-adapted and expensive chairs that have commonly been used by gynecologists for examinations.

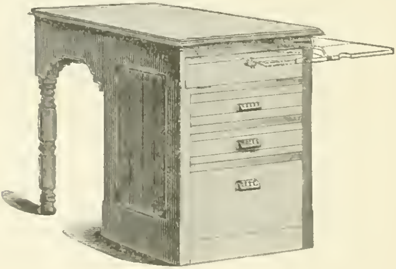

FIG. 1.

It is of black walnut, and, when not in use, will pass for an ordinary desk, as is shown by Figure 1. The solid end is on castors; the other end is devoid of them, so that the table may not slide round too freely during examinations; the latter should be lifted when the table is moved.

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[1] A curious case in point is related by Thomas in his "Treatise on Diseases of Women," 1874, p. 388, where a globe pessary had gradually dilated the os and cervical canal and migrated into the uterine cavity, where it remained for some time, causing obscure uterine symptoms. It was finally detected and removed by Dr. L. A. Sayre, whose service in Bellevue Hospital the patient had entered.—ED.

The smooth polished top is 3½ feet long by 2 feet wide; at the solid end two broad leg-rests draw out to a distance of 2 feet, making the entire length 5½ feet, which is quite sufficient for any woman reclining at full length.

Either leg-rest swings out sideways until it stands at an angle of 130°–140° with the end of the table, thus being in position to support the legs when the woman is in Sims' position (Fig. 2).

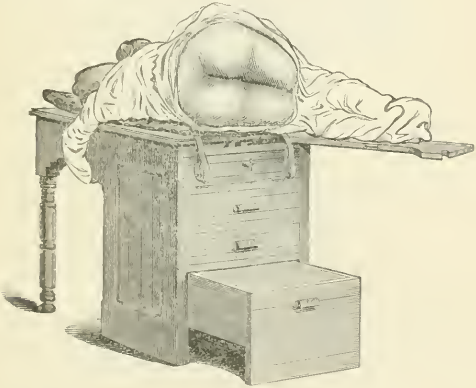


FIG. 2.

The leg-rests are further provided with hinges at about their middle, so as to turn up and be caught at right angles, thus supporting the feet during examination in the dorsal positions (Fig. 3). The foot-rests are made in projections from the body of the leg-rests, it having been found that the knees fall outwards when the feet are brought near to each other, and the exploration thus rendered easier.

The under side of the mattress is of sail-cloth, to which are attached two straps, whereby the mattress, and with it the patient, may be drawn to the edge of the table, in place of the latter being lifted. The mattress is doubled and packed in the upper drawers when not in use.

The lower drawer pulls out to form a step, whereby the patient mounts upon the table. The top of the drawer then slides off, revealing compartments for cotton-wool and tampons in the back of the drawers, while the space in front is reserved for two basins.

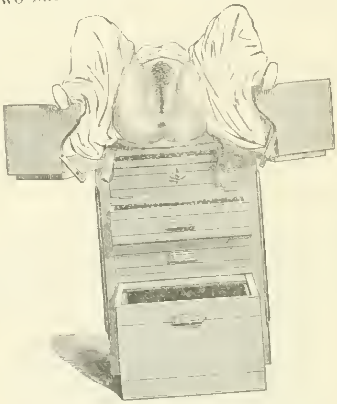


FIG. 3.

The third drawer is divided into six equal compartments, two devoted to clean towels, and the remaining four to pessaries.

The second drawer has in one anterior corner a jar for the lubricant, in the other a jar for glycerine, while the intervening space is arranged for six bottles of acids, etc. These are all made accessible by pulling out the drawer about three inches. The remaining space in the drawer is intended for instruments.

The patient, when taking her position upon the table, should be required to draw up her clothes behind, so that they may not subsequently fall over the drawers, and impede their unrestricted use.

It is intended that the soiled specula, instruments, cotton, and towels should be all placed in the lower drawer, and concealed by the sliding cover before the patient rises, all shock to the feelings by the sight of blood being thus averted.

The following advantages are claimed for this table:

1. That its presence in a physician's office would never excite suspicions as to its uses.
2. That it is perfectly adapted for examinations in all positions.
3. That in it may be kept, readily accessible, all the instruments, appliances, and medicaments likely to be needed.
4. That it is cheaper than nearly all of the chairs or tables now in the market.

Messrs. Codman & Shurtleff, 13 Tremont St., Boston, have the tables for sale at about forty dollars.

CLINICAL CASES.

A CASE OF INTERSTITIAL PREGNANCY.

BY
CLEMENT CLEVELAND, M.D.,
Attending Surgeon Charity Hospital, New York.

(With one lithographic plate.)

MARY WOODS, æt. 25, admitted to Charity Hospital, Jan. 25th, 1878; died Jan. 28th, 1878.

She stated that, three or four days before admission, she slipped down two or three steps while descending a staircase, and immediately after felt pain in the left iliac, and also in the lumbar region.

On examination, a spot of tenderness was discovered over the left horn of the uterus, and the organ itself was found to be enlarged.

The patient said she was advanced to between the fourth and fifth months of pregnancy.

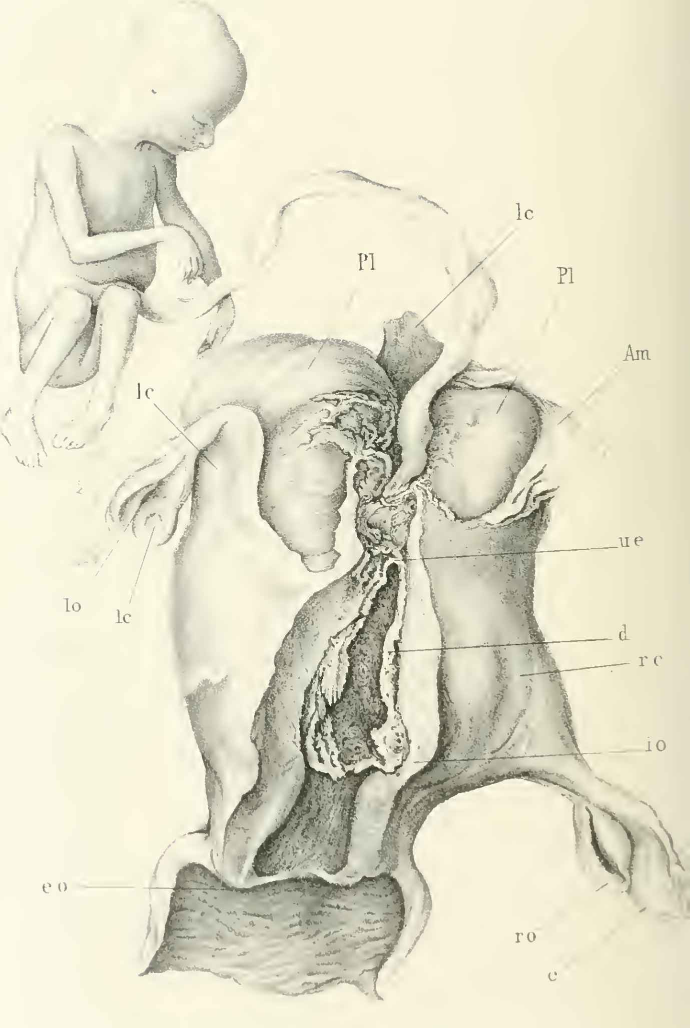
During the day she tossed about in bed and disturbed the whole ward with her cries of pain. In the evening she complained of feeling cold. During the night and following day she vomited, the vomited matters being either mucus or undigested food. The next day she still complained of pain and coldness. The surface of the body felt cold to the hand. The pulse 100; small and intermittent. The respiration normal. No tympanites. In the evening of the second day, there was tenderness over the surface of the enlarged uterus. Pulse 140, small, thready, and intermittent. Respiration, 30, thoracic. No tympanites. Temperature in the axilla, 97°. During the night she continued to complain of the pain severely, and vomited several times. The vomited matters were not seen. She died quietly and suddenly at 11.30 of the third day.

The autopsy was made by Dr. E. A. Maxwell. Curator of the Hospital, 27 hours after death.

Body large, well nourished; rigor mortis almost entirely wanting.

On opening the abdominal cavity, a large blood-clot was found, occupying its lower half. Examination disclosed a male fetus, nine inches in length, and weighing seven ounces, with hair just visible, nails forming, and eyes unopened, lying backward, nearly opposite umbilicus. It was surrounded by a soft, dark blood-clot, with a few coils of small intestine overlying. The cord was unbroken. This was traced through a jagged laceration, five inches long, situated in the left cornu of the uterus. On closer inspection of the uterus and appendages after removal, the condition found was an interstitial pregnancy, occupying that position of the left cornu, situated between the ligament of the ovary, and the left Fallopian tube. The ligament of the ovary is pushed downward and backward. The broad ligament is put upon the stretch and elevated out of the pelvic cavity. The Fallopian tube runs over the anterior portion of the sac, and its canal is traced throughout, unlined with any decidua. The uterine opening of the canal terminates within the sac, about one and one-half inches below the border of the laceration.

The round ligament comes off at the outer or lower border of the sac. The sac measures, from a point between Fallopian tube and round ligament to a corresponding point on the opposite side, six inches, and vertically, five and a half inches. The thickness of the walls on the anterior surface, corresponding with the body of the uterus, is one-quarter of an inch; at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the lacerated portion, barely one-eighth of an inch. The placenta still remains attached to the inner wall, at the base of the sac, and there are shown, at two or three points, large blood-clots between the inner wall of the sac and the placenta. At the left extremity of the laceration above mentioned, for one and one-half inches, there is a band of the wall intact. Then there is a second laceration, through which a portion of placenta, with a clot attached to its surface, protrudes. There is also hemorrhage beneath the peritoneum, over the superior and left borders of the sac. The weight of the blood-clots collected was two pounds, and of the blood sponged out the weight was estimated at one pound more. The sub-peritoneal vessels, especially over the anterior surface of the sac, are widely dilated.

The left ovary contains the corpus luteum of pregnancy, circular, three-quarters of an inch in diameter, containing central cyst with clear contents. The cyst is one-quarter of an inch in diameter, with its walls convoluted.

The length of the uterus is six and a half inches, $4\frac{3}{4}''$ of which belong to the body and left cornu, and $1\frac{3}{4}''$ to the cervix. The muscular walls are about one inch thick. The cavity of the body is three inches long and lined with decidua about one-quarter of an inch thick and intact. The left cornu is hypertrophied and dilated.

The cervix is a little under two inches in length, and contains the usual mucous plug of pregnancy.

The right Fallopian tube and round ligament are normal; so also is the right ovary, which has remained at its normal altitude with the undeveloped right cornu, and is therefore distant but 4″ from the external os. The round ligament at its outer border contains a cyst about the size of a hickory nut.

The vagina is normal.

The perineum shows a central perforation, old, admitting the index finger.

The peritoneum, on its parietal, anterior, and posterior surfaces, in both iliac fossæ and over the promontory of the sacrum, and just above it, also on inferior border of sigmoid flexure of meso-colon, shows slight roughening, due to the pressure of the sac.

In the sigmoid meso-colon, at its attachment to the gut, appears a sub-peritoneal hemorrhage, about one inch in diameter, and also at several points on the small intestines there are small sub-peritoneal hemorrhages.

There are no evidences of recent peritonitis.

EXPLANATION OF THE PLATE.

Posterior Aspect of the Uterus (chosen for the cut in preference to the anterior, because the extent of the laceration and appearance of the coagula is best shown from behind.)

l c, left cornu.
l o, left ovary and tube.
c l, corpus luteum of pregnancy in left ovary. (Erroneously marked *l c* in plate).
pl, placenta.
am, amnion.
u e, superior extremity of uterine cavity in left horn.
d, decidua.
r c, undeveloped right cornu.
i o, internal os.
e o, external os.
r o, right ovary.
c, cyst.

A REMARKABLE CASE OF MORPHINE TOLERANCE BY AN INFANT.

BY

JAMES L. LITTLE, M.D.

Professor of Surgery in the Medical Department of the University of Vermont; Lecturer on Operative Surgery and Surgical Dressing, College of Physicians and Surgeons, New York, etc., etc.

ON September 15th, 1877, I was called to see a child in consultation with Dr. Jas. O'Reilly, of No. 303 West 42d Street. The history of the case is as follows: The boy was born on January 27th, 1877. About three weeks after birth, he had an attack of inflammation of the right knee-joint, followed by an abscess, involving the joint and causing intense suffering. The mother of the child commenced giving paregoric in small doses, gradually increasing the dose as the pain required it, until a teaspoonful was taken at a time. This not being enough to alleviate the suffering, Dr. O'Reilly advised the mother to give tinct. opii in drop doses. This was done, the doses being carefully and gradually increased until it became necessary to give two teaspoonfuls at a time, and this dose several times repeated during the day to relieve the severe pain from which the child was suffering. The knee at this time was in a very bad condition, having five or six openings communicating with the joint, and the entire surface being inflamed and tender. The leg was drawn up so that the heel touched the buttocks. During the latter part of March, 1877, the use of Magendie's solution of morphia was begun, the first doses being one drop each, repeated several times during the day until the child had taken four or five drops. This was gradually increased, and so soon did the child obtain a tolerance of the drug that, in a couple of months, from half a drachm to a drachm a day was necessary to quiet it. During the latter part of August, the mother was taken sick with typhoid fever, and at that time the child was taking about half an ounce of the solution a week, in doses of fifteen drops each. On September 14th, the mother being very sick, and the child screaming violently most of the time, an aunt, who was taking care of the child, gave it larger and larger doses of the Mag. solution, until about two drachms had been taken in a few hours, without any apparent effect.

When the physician made his morning visit, he told the aunt to give the child enough of the solution to keep it quiet. At 8 P.M. he returned, and to his surprise learned that half an ounce of Mag. sol. had been taken without any effect. Having some suspicion as to the reliability of the preparation, he called on a druggist on Ninth Avenue, and had prepared one ounce of Magendie's solution, using 16 grains of Powers and Weightman's morphia. This solution was made in his presence, and sent to the patient. Calling at 8 o'clock the next morning, he learned that the entire ounce had been administered by the aunt to the child, during the night, together with half an ounce of the solution which had been in the house, and which had been obtained from Mr. Alsdorf, druggist, corner Eighth Avenue and 42d Street, thus making *the amount consumed by the child, then less than eight months of age, two ounces* (℥ ij) *in twenty-four hours, of which one and a half ounces had been taken within twelve hours.* From that time until the death of the mother, which took place a week after (September 21st), the child received one ounce of Mag. sol. daily. For nearly a month after the mother's death, it was given an average of almost an ounce each day. Some days the child seemed to suffer more than usual, and then large and repeated doses were necessary to insure quiet. On other days, one or two teaspoonfuls were all that was necessary. When the effects of the drug wore off, the child would scream and moan, and would not cease until the usual remedy was given. When I first saw the child, it was weak and puny, the right knee-joint was stiff and bent at an acute angle. Over the knee-joint could be seen the cicatrices of the five openings which had healed some time before. During the day, it had taken a dessert-spoonful of the solution and it was quiet, this being one of its better days. The family then promised to send for me when it had one of its "bad" attacks, so that I could see the morphia administered.

Sept. 19th, I was sent for at 7 P.M., but unfortunately could not go. The messenger who called informed me that the child had taken one ounce of Magendie's solution since morning, and that he was on his way to the druggist to procure another ounce. The next morning the aunt told me that the child had taken this ounce during the night; thus making for the second time the amount taken in twenty-four hours two ounces of Magendie's solution, containing thirty-two grains of the sulphate of morphia.

Being desirous of thoroughly testing the matter myself, on October 8th, I called on Caswell, Hazard & Co., and had prepared by my directions a quantity of Magendie's solution of morphia. At 6 P.M. the same day, I called and found the child screaming violently. One drachm of this solution was administered, the child swallowing it eagerly and smiling. A teaspoonful of water was then offered which the babe instantly rejected. This, the aunt stated, was of common occurrence, it being almost impossible to get the child to swallow water, while it would take the solution of morphia with avidity.

On October 13th, not having heard from the case, I called, and learned that during the night of October 8th, the patient had slept very well without repeating the dose. To-day the child is very restless, although three teaspoonfuls of the solution have been taken since one o'clock this morning. Dr. O'Reilly then administered in my presence one drachm of Caswell, Hazard & Co.'s solution. This was at 10.30 A.M. At 1 P.M. I called, and found that the child had fallen asleep about fifteen minutes before, and was still asleep. At 7 P.M. the aunt called and stated that the child had awakened at about 2 P.M., since which time it had been screaming continually. I sent Dr. Maynard to see the patient at 8.15 P.M., and he gave it another drachm of the same solution.

The next day, I called and learned that the aunt had administered still another drachm of the solution during the night. Child was quiet this morning.

Feeling satisfied that the child would tolerate these large quantities of morphia, I advised the aunt to diminish the dose gradually, but as rapidly as possibly.

February 14th, 1878.—Have seen the child several times since last note. The dose of the solution had been so diminished that by the middle of December the child was satisfied with one dose daily, a drachm at bed-time. Since the middle of December the daily dose has been diminished at the rate of about three drops a week. At the present time it takes but ten drops at bed-time. If this dose is not given, the little fellow is restless, cries, and does not sleep.

Its appearance has very much improved, it having gained in flesh, and it seems to be as intelligent as most children are at that age. Its weight is eighteen pounds. It is also rapidly regaining the use of the knee-joint, although it is still unable to fully extend it. The patella is freely movable.

Dr. O'Reilly states that, during the time the child was taking these large doses of morphine, he attempted to substitute the bromide of potassium, administering it in thirty-grain doses every three or four hours until half an ounce had been taken, without producing any perceptible effect; he therefore discontinued it. It may be well also to state that the child's bowels were habitually costive. It vomited but little, and although it took a sufficient quantity of milk, it was thin and badly nourished, looking like a child suffering from marasmus.

I would state, in concluding the report of this remarkable case, that there is not the slightest doubt that the statements as given above, in regard to the quantity of morphine taken, are entirely correct, there being no motive whatever for deception.

The family have resided in the same part of the city about thirty years, have been patients of Dr. O'Reilly for fifteen years, and have been known to me ten years. The child's name is Charles Short, and he is now living at No. 524 W. 42d Street.

A CASE OF PUERPERAL CONVULSIONS IN THE EIGHTH MONTH OF UTERO-GESTATION, BEFORE AND AFTER DELIVERY, SUCCESSFULLY TREATED BY CHLOROFORM AND THE INDUCTION OF PREMATURE LABOR, WITH REMARKS ON THAT TREATMENT.

BY
JULIO J. LAMADRID, M.D.,
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ON the 4th of April, 1877, I was called in haste to see Mrs. C., aged 18, a patient of my friend Dr. Nathaniel Matson, with whom I saw the case afterward for several days in consultation. When I arrived at the house, I found she had been insensible for a few hours previous, and was just getting over one of her eclamptic attacks, of which she had had already six, with an interval of about fifteen minutes between each, and of three or five minutes' duration. On further investigation, I learned the patient was a primipara, eight months pregnant. Her general health had been poor previous to and for some time after her marriage a year ago; in fact, at that time she was subject to chorea. The chorea, however, disappeared soon after she became enceinte—a fact rather remarkable, I think, for one in her condition.

As might be expected, she had a very anemic appearance, and was somewhat emaciated, but no edema in any part of the body. Lately her appetite had been poor and capricious, and her bowels inclined to be costive. On the other hand, she had been free from headaches up to that day; in the morning, however, her mother tells me she complained for the first time of pain in the head, and said that she had not felt well for the last two days. Before I proceed any further, it may be proper to state here that Dr. Matson had already seen the patient some time during the day before I did; but as the latter had to attend a case in court, he left word that they should send for me, if she should get worse, or have any more convulsions. In the mean time, she was to continue taking ten grains each of bromide of sodium and chloral hydrate together in solution every two hours, which the doctor had prescribed for her, and of which she had already taken three doses when I reached her house. Soon after my arrival, I succeeded in giving the patient twenty grains more of chloral hydrate—this I happened to have with me, as I always carry it in my pocket in my hypodermic case;—but she had no sooner swallowed this than she went off suddenly into another severe attack, during which her body became much distorted, face livid, and lips and tongue almost black, with foam at the mouth, and a rattling peculiar noise in the throat. The pulse was full, and beat 108 per minute. Ordered applications of ice-water to the head, and hot bottles to her feet.

During the remission, I made an examination per vaginam, and found the uterus much anteverted, the cervix very high up and difficult to reach; but by using my left index, I succeeded in hooking my finger into the cervix, and by bringing down the latter into the line of the vagina, I soon was able to pass my finger through the internal os into the uterine cavity. While I was making continuous traction upon the anterior lip of the os, for the purpose of forcible dilatation, and thereby bringing on labor as quickly as possible and effecting delivery either by version or with the forceps, another attack took place, which, for the time being, prevented me from accomplishing my object. By this time I had provided myself with some chloroform (Squibb's), and immediately placed the patient under the anesthetic influence of that drug, and soon had the satisfaction of knowing that the convulsions were apparently under control. The chloral hydrate was again given (grs. xxx.), just half an hour after the last dose. At this time my friend Dr. Matson made a most timely and welcome appearance, and we at once held a consultation together, after which we deemed it advisable to continue with my previous efforts to induce premature labor, so as to deliver the lady as speedily as possible. By so doing, we thought, perhaps, this might put a stop to the convulsions, and her life might yet eventually be saved, which, at the time, seemed to our minds very doubtful. Chloroform was therefore reapplied, and I then introduced the smallest of Barnes' dilators, but this Dr. M. thought was too slow work, so that after a while he decided to use his own fingers, which he believed would answer the same purpose, if not in a shorter time, fully as well. Just before the chloroform was readministered, a teaspoonful of Squibb's fluid extract of ergot was given, to act on the womb and thereby help on rapid delivery. After an hour of steady hard work and perseverance—during which the membranes were ruptured—the os uteri, which proved to be very rigid at first, was at last considered sufficiently dilated to admit the forceps, or for the child's head to pass through; therefore, Hodge's forceps were applied at once to the sides of the head by Dr. Matson, and by using alternately both the oscillatory and rocking-chair movements, the child was delivered in a short time without much trouble. As there were yet some feeble pulsations felt in the cord, attempts were made to resuscitate the child, but failed, for the pulsations soon ceased altogether.

The placenta speedily came away, and the little hemorrhage which took place immediately after its expulsion was thought trifling, considering the nature of the case. At this time, another teaspoonful of ergot was given, and, by firm but gentle compression over the hypogastric region, the uterus contracted in a most satisfactory manner. Soon after the chloroform had been withdrawn, patient had one more convulsion, during which chloroform was again used. After that she slept for nearly an hour, apparently naturally, at the end of which she still had another severe spasm, which soon yielded to the chloroform. We left the house at half-past seven P.M., two hours and a half after parturition. Patient then was sleeping again. The mixture of sodium bromide and chloral hydrate was ordered to be continued every one, two, or three hours, according to circumstances, in two teaspoonful doses.

At 11 P.M. we saw the patient again (Dr. M. saw her once during the interval), who as yet was unconscious. Had had two more convulsions (controlled by chloroform); last one, however, very light—pulse 130, temperature under the axilla 103° F. Treatment: ordered two grains of quinine every two hours, and fluid extract veratrum viride gtts. viii., to be given in two doses, with an interval of two hours between each.

April 5th. 9 A.M.—No more convulsions, but still unconscious; pulse 120; temperature 102½° F. Some tympanites, for which turpentine stupes to the abdomen and an enema of the same were ordered; also quinine to be continued as before. As the patient had not passed urine since delivery, a catheter was used, and after drawing the urine, an examination of it was made, and found to be highly albuminous, but no casts.

At 9 P.M.—Complete consciousness had returned, and although the patient recognized her friends, she had not spoken a word, and apparently seemed to have lost her power of speech, as she would not make any answer to a few of our questions, but would readily nod Yes or No with her head; thus it was she told us of some pain and tenderness in the abdomen, for which was prescribed tinct. opii deodorat. gtts. xx. every two or three hours. Pulse and temperature about the same as in the morning.

April 6th, 9 A.M.—Patient is able to talk, and complains of great soreness and pain in the abdomen. On examination, found great tenderness and tympanites, especially in the hypogastric region. Pulse 124, temperature $102\frac{3}{4}$° F. Tongue very much coated, and discharge per vaginam very offensive. She also complains of ringing in the ears, produced no doubt by the quinine. The latter was ordered at longer intervals, and, in addition, iron, for the purpose of making up the deficiency or loss produced in the red corpuscles by the increase in the elimination of albumen. To assist the iron, nux vomica and sweet spts. of nitre were prescribed in combination as follows:

℞ Tincturæ ferri chloridi,
Tincturæ nucis vomicæ............āā f. ʒ iv.
Spiritus ætheris nitrosi (Squibb's).....f. ℥ iii.

Misce, fiat mistura. Dose—Take a spoonful in plenty of water three times a day.

I here made the suggestion to Dr. M., and called his attention to the fact, that this was a proper case for the administration of hydrargyrum chloridum corrosivum, which, according to Dr. Keyes' valuable researches, has the power of also increasing the number of red corpuscles in all those cases where there is a deficiency of them, as in anemia, albuminuria, etc. He (Dr. M.), however, felt a little prejudiced about it, and thought better not to use it.

Treatment.—Continued with the opium in gtts. xx. every two hours; also hot fomentations to the abdomen for the tenderness, and turpentine both internally and per rectum for the tympanites, with assafetida, and injections of solution of acidum carbolicum per vaginam. Urine had to be drawn again.

At 9 P.M.—Patient complains of less pain and tenderness; abdomen not so tense. Pulse and temperature about the same. Continued the same treatment.

April 7th, 8 A.M.—Pulse 120, temperature 104° F.; more pain and tenderness, and abdomen larger from the accumulation of gases. The same treatment; also gr. x. of calomel, to move the bowels.

At 8.30. P.M.—Patient had two free movements from the bowels; otherwise, much the same as she was in the morning. Ordered tinct. opii deodorat. in larger doses (gtts. xxx.) every two hours, and extracti veratri viridi fl. gtts. v., to be repeated in two hours, if she did not complain of nausea.

April 8th, 9 A.M.—Pulse 108, temperature $101\frac{3}{4}$° F. Tongue is clearing at the edges, and, as a whole, there was a change for the better.

For the rest of the details of this case, I am indebted to Dr. Matson.

April 9th.—Patient continued improving.

April 10th.—Pulse 100, temperature 99° F. Everything going on nicely. Continued with the quinine three times a day, and the iron mixture as before. From this date, patient kept on improving.

April 22d.—Dr. M. ceased his professional visits. Urine completely free from albumen.

April 25th.—Patient had a little relapse through imprudence in eating; the consequence was she was taken with severe vomiting and other symptoms of indigestion. Pulse 130, temperature $103\frac{1}{2}$° F. All this, however, subsided in a short time under proper treatment.

In looking over the above case, it will be noticed that its treatment has been on general principles, so far as the bodily health was concerned. As to the efficacy of chloral hydrate in this disease, I must say I was very much disappointed, especially after having read from the different sources such vivid account of its power and virtue in such cases. This case, I think, will confirm what I have said, and fully illustrate its inertness or failure in the present instance to mitigate or control the spasms, or to prolong the intervals between each attack, or to shorten their intensity, notwithstanding the doses were given as large and as frequently as in those cases already reported elsewhere.

The foregoing case is interesting, owing to the diversity of opinion which still exists among many physicians, as to whether we ought to bleed in these cases. The present case will go to farther corroborate the experience of those who are in favor of chloroform, while those who are opposed to this practice will readily admit the impropriety of having bled this patient in her already anemic and poor condition. How true and proper this was, may be seen by the happy result and success met with in the said case, thus fully sustaining us in our views as to the nature of the case, and the course pursued therein. It cannot be denied, however, that bleeding, in some cases, is the treatment "par excellence" in puerperal convulsions, and especially is this the case in strong and plethoric patients. Even then I think we will find a most powerful and efficient agent in chloroform to control or shorten the spasms, as shown by our recent experience, and the large number of cases which we read almost daily in medical literature.

In speaking on the use of chloroform in eclampsia, Dr. Alfred Wiltshire makes the following interesting remarks on a case of his reported in the London *Practitioner*, Nov., 1870, page 267, and which I take the liberty of reproducing here in toto. He says, "Apart from highly interesting considerations as to the etiology and pathology of the foregoing case, there are two practical points in the treatment of it which are very instructive. The first is that in chloroform we have an agent capable of arresting and keeping in check the convulsions, which of themselves might kill. This to the obstetric practitioner is no small boon. To have it in one's power to arrest and avert the hideous convulsions, which are so terrifying to non-professional beholders, is a gain, and still more is it a gain to be able to prevent the exhaustion consequent upon so great a waste of tissue, and the damage which must accrue to the nervous centres from repeated and quickly recurring fits. Moreover, death unquestionably does sometimes occur during a convulsion. On all grounds, therefore, it is important that the fits should be stayed. This (I speak from observation) chloroform will generally enable us to accomplish; meanwhile time is gained for other methods of treatment, with which, as a rule, it need in no way interfere.

The second point is also one of great importance: it has reference to the means whereby labor can be expedited."

Again, the editors of Braithwaite's *Retrospect*, in the July number, 1871, make the following remarks in their journal preceding a report of a few cases by J. J. Phillips, M.D., in Guy's Hospital Reports, 1870–'71. [" The plan of treatment pursued by Dr. P. has been in all cases the use of chloroform, without venesection. Whilst Chailly-Honoré (1859) relates that he saved eighteen out of nineteen cases which he treated with chloroform, and Prof. Braun, of Vienna, did not meet with a single death in sixteen cases treated by the same means, older records show a mortality of one-half, or, at best, one out of three. It is undoubted that, at the present time, venesection is more frequently employed than any other remedy, in the treatment of the disease. Notwithstanding that Brown-Séquard and others state it as a fact, that at the outset of an epileptic attack, the great nervous centres of an animal subjected to experiment become pale instead of presenting signs of congestion."]

Dr. Phillips, after giving several interesting cases, sums up with the following conclusions. He says: " These cases are, of course, far too few in number to warrant conclusions being drawn from them alone. Evidence is, however, accumulating in favor of chloroform; and I venture to submit the following propositions, which are, I think supported by theoretical considerations and practical experience.

That bleeding has no claim to be regarded as a remedy for puerperal convulsions, and that, in the majority of cases at least, if seen at an early period of the attack, it is unnecessary. That the chief reliance should be placed on chloroform, which prevents the recurrence, or diminishes the violence of the paroxysms. That in mild cases it is sufficient to keep the patient very slightly under the influence of chloroform in the intervals, more being given where indications of a fit are seen; but that in severe cases the patient should be kept for a time uninterruptedly under its influence.

That if the convulsions have already produced much pulmonary congestion, it is beneficial to withdraw a few ounces of blood before administering chloroform; and that generally it is advisable to lessen the tendency to cerebral congestion by the application of cold to the head."

Playfair, in his System of Midwifery, American Edition, page 503, says: "The great indication in the management of eclampsia is the controlling of convulsive action by means of sedatives. Foremost amongst them must be placed the inhalation of chloroform—a remedy which is frequently remarkably useful, and which has the advantage of being applicable at all stages of the disease, and whether the patient be comatose or not."

I may add, in conclusion, that the small amount of hemorrhage which took place immediately after the placenta came away did not seem to have the least effect on the convulsions that followed after delivery. I omitted to state that, in addition to treatment, the patient's strength, when she required it, was sustained by stimulants, and plenty of beef-tea and milk.

295 FRANKLIN AVENUE.

A CASE OF SARCOMA OF THE OVARY AND PELVIC HEMATOCELE.

BY
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THE incompleteness of the history of the case must be excused on account of the severe prostration with which the patient suffered. It was with much difficulty that the few facts reported were obtained.

Rosanna McA., aged thirty, born in Ireland, married, admitted into the Presbyterian Hospital June 3d, 1876. Her menstrual life began at the age of fifteen. She was always regular and suffered severe pain during those periods. Was married when thirty-three. Has had two children and several miscarriages. One of the children is alive, aged five years: the other was an eight-months child and lived only two days.

Is of intemperate habits and lived in extreme poverty. About two months ago, she began looking pale and to be affected with vomiting whenever she ate anything. Three weeks ago, says had another miscarriage, followed by great distention of the abdomen, constant vomiting, severe bearing-down pains in the lower portion of abdomen, throbbing sensation along the course of the abdominal aorta; bowels became constipated; a profuse, watery, offensive discharge from vagina appeared; and countenance became more pallid.

On admission, patient has a very pale, anxious countenance. Surface of body very pallid. Extremities cold and edematous. Is very weak; least exertion causing syncope. Temperature 103°; pulse 120, very feeble. Complains of severe, bearing-down pain in the lower portion of abdomen; great and distressing tympanitis; constant desire to defecate and micturate, but has passed nothing from bowels and only a small quantity of urine for some days back. The introduction of a catheter allows the passage of a small quantity of urine, which, on examination, gives thirty per cent albumen and granular casts. There is also a serous, fetid, vaginal discharge. By carefully palpating abdomen, can map out a large mass, situated chiefly in the left iliac region, extending as high as the umbilicus, and over to the right of the median line. It is hard, immovable, and non-fluctuating. Per vaginam can feel a hard mass behind, above, and chiefly on the left side of the uterus, almost occluding the vagina, and giving the sensation that nothing intervenes between the finger and the tumor but a thin layer of tissue. Can feel no cervix uteri. To relieve the distention of the abdomen and unload the rectum, an enema was given and a rectal catheter passed a short distance, without accomplishing either object. Morphine was given hypodermically till she was partially narcotized; and ten grains acet. potash in two drachms inf. digitalis t. i. d., to increase flow of urine.

Next day, she was very restless. Complained of pain in abdomen. Had a temperature of 105°, and a very weak pulse. Gave another enema, during which she fainted. Continued the morphine, with twenty grains of quinine and stimulants.

However, she never rallied, but continued growing weaker, with continued high temperature and died on the morning of the tenth.

Autopsy, twelve hours post mortem. Moderate rigor mortis. Body very pallid. Extremities edematous, left lower more than right. On opening the abdominal cavity, there gushed out a hot, dark-colored, bloody fluid containing clots, with a very offensive odor and very large in amount. When cleared away, the peritoneum and intestines were found blackened and easily broken down; and it appeared that the fluid had filled the pelvic cavity, in greatest amount on the left side; and had stripped up the peritoneum in front, for a short distance on the right side. The left ovary was very much enlarged, black in color, and having ragged surfaces. The right ovary was apparently normal. The uterus was pushed over to the right side of pelvis, had thin walls, and there existed no cervix; the body joining the vagina as one continuous canal. The kidneys were congested and bore evidences of chronic Bright's disease. Other organs not examined.

Dr. Satterthwaite, Pathologist to the Hospital, made the following report on the ovary. "The ovary is enlarged to about the size of a turkey's egg; easily separated from its capsule; and presents a friable granular appearance, with irregular cavities or cysts scattered throughout it. Making a section through it, the internal and inferior portion shows a loss of substance, at which point there has apparently been the hemorrhage which constituted the sub-peritoneal hematocele. On microscopic examination, the tumor appears to consist of a delicate reticulum of fibres, inclosing in many places rounded corpuscles the size of leucocytes; there were also larger trabeculæ, lying at tolerably regular intervals apart. Extensive staining with blood appeared here and there in the tumor; and it looked much as if the red and white blood-corpuscles were the source of the fixed corpuscles. It is a peculiar and somewhat rare form of round-cell fibro-sarcoma of the ovary, undergoing degeneration."

This adds another case of sarcoma of the ovary to the four reported by Dr. Atlee, at the last meeting of the American Gynecological Society, noted in the report of that body in the number of this JOURNAL for October, 1877, page 718.

CASES FROM THE NEW YORK STATE WOMAN'S HOSPITAL.

REPORTED BY

JOSEPH D. ANWAY, M.D.

Late House Surgeon.

I.—CASE OF DOUBLE VAGINA.

KATE McG., æt. 27, married 6 years, no child, no abortions Sick six years, was admitted to the Woman's Hospital, service of Dr. Peaslee, and gave the following history. She first menstruated when fourteen years old, and has always been regular. During the first two days of the menstrual flow she has had considerable pain in the hypogastric and lumbar regions. The time of the "flow" has usually been six days. The quantity has always been large. Since her marriage she has had more or less leucorrheal discharge. Sexual intercourse has always been painful, at times the pain would be more severe than at others ("the passage seeming smaller at times"). Her chief complaint is sterility.

Physical Examination disclosed a septum in the vagina antero-posteriorly, commencing just within the vulva, and dividing the vagina into two cavities of unequal size, the left being the larger. The probe could be passed into two distinct uterine cavities, which had apparently no connection with each other. The condition could readily be overlooked, even when the labia were parted. The patient did not know that the condition existed, and her physician had introduced a pessary and treated her for some time without discovering the extra passage. *Operation:* April 12th, the patient under ether. Dr. Janvrin passed a Peaslee's needle, containing a silk suture, through the septum immediately in front of cervix. To this suture he attached the platinum wire of the galvano-caustic battery. A bivalve speculum was now introduced, one blade being in the left cavity and one in the right, to prevent burning the vagina. The platinum wire was now heated sufficiently by the galvano-caustic battery, and gentle traction was made, the septum being divided without the loss of a drop of blood.

April 24th. The parts have healed entirely, and there is now a capacious vagina, there being merely a raphé-like central line on the anterior and posterior vaginal walls, to indicate the former attachment of the septum. May 10th, discharged.

II.—CASE OF DOUBLE VAGINA AND UTERUS.

Ann McA., æt. 28; married six months; no child; one abortion (?). Admitted to Woman's Hospital, service of Dr. Peaslee, May 18th, 1877.

History.—She began to menstruate when twelve or thirteen years of age, and was always regular. The length of the menstrual period was usually three or four days. She always had some pain at the time of the menstrual flow, which came the day before the flow and lasted a few hours after it was established. The amount of blood lost at periods is very scanty, although the patient is a large, well-nourished woman. Six months before admission she was married, and she has "passed through six months of agony." Sexual intercourse has been attended always by the most intense pains. She did not menstruate for two months after marriage. On the 9th of February, she was taken with pains in the back and hypogastric region, and "bearing-down pains" about the uterus. There was a discharge of blood, which came from the vagina in coagulated form. The hemorrhage was not profuse at any one time, but continued two weeks, and then ceased entirely. After this she was perfectly well, and menstruated on the 8th of March, having very little, if any, dysmenorrhea. Six weeks later she menstruated again, with very little dysmenorrheal pain, the flow continuing for two weeks. She was then comparatively well, although quite weak, until the 6th of May, when, after taking some "worm medicine," she was seized with severe pains in the hypogastrium and back, accompanied by vomiting, which recurred now and then for two or three days. The abdomen was very much distended, and the only position in which she could obtain any degree of comfort was on the side, with thighs flexed on the abdomen. She had no chill, but considerable fever. She was told by her physician that she had miscarried in February and also at the last time when she flowed so profusely. At both times she had morning sickness and other symptoms of pregnancy. She has suffered a great deal during this last sickness from vesical tenesmus.

Physical Examination.—On examination the patient is found to have a bifid vagina and uterus. The septum commences 1½ inches within the vulva, is antero-posterior, and extends to the fundus uteri, dividing the uterus into two non-symmetrical tubes, the left being the larger. She has a temperature of 102½°; pulse 120. There is both pelvic peritonitis and cellulitis, the roof of the pelvis being walled in by exudation, and each broad ligament being the seat of inflammatory deposit.

Treatment.—Patient was placed in bed and kept under the influence of anodynes for a time. Quinine, grs. x., night and morning, and hot vaginal baths three times a day. June 8th.—Under the treatment mentioned above, the patient has rapidly improved; and the exudation has been rapidly absorbed.

June 14th.—The patient being under the influence of ether, Dr. Peaslee divided the septum with the galvano-caustic wire in the manner described in the preceding case. There was no bleeding.

June 25th.—Patient has continued the hot baths since operation. The vagina appears almost like the normal one, there being only a slight trace of the original septum to indicate its former position.

IN MEMORIAM.

EDMUND RANDOLPH PEASLEE.

EDMUND RANDOLPH PEASLEE was born at Newton, New Hampshire, January 22d, 1814. We have no record of his boyhood, or of his life previous to graduating from Dartmouth College, with the class of 1836. In this institution he occupied the position of tutor from 1837 to 1839, when he entered the Medical Department of Yale College and took his degree in 1840.

The following year he settled in Hanover, N. H., and commenced the practice of his profession. Without waiting in expectation, he began his busy life by delivering a popular course of lectures on anatomy and physiology.

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[1] Read before the Medical Society of the County of New York, Jan. 28th, 1878.

E. R. Peaslee, M. D.

These lectures indicated so clearly his talents that, in 1842, but two years after entering the profession, he was appointed Professor of Anatomy and Physiology in the Medical Department of Dartmouth College. In this medical school he continued to hold a professorship, until his death, and delivered the course during the summer season. Within a year afterwards, in 1843, he was appointed Lecturer and shortly afterwards Professor of Anatomy and Surgery in the Medical School of Maine, connected with Bowdoin College. He filled those two professorships until 1857, when he gave up anatomy, but continued to lecture on surgery until 1860. Dr. Peaslee first came to the city of New York in 1851, on receiving the Professorship of Physiology and general Pathology in the New York Medical College, then just being established.

This position he held for four years, when he was transferred to the chair of obstetrics, and continued to lecture on this branch until the institution was closed about 1860. He, however, did not settle in New York, to the practice of his profession, until 1858. After 1860 he seemed to have devoted himself to his practice and only lectured during the summer or autumn course in Dartmouth College. But to do justice to his subject and compress the whole subject into the space of some six weeks, this being his time of recreation from business, he always delivered at least two lectures a day and frequently more. In the year 1870 he was elected one of the trustees of his Alma Mater, who had in 1859 conferred on him the degree of Doctor of Laws. From 1872 he delivered a course of lectures in the Medical Department on the Diseases of Women. Two years afterwards, the course on Obstetrics and the Diseases of Women in the Bellevue Hospital Medical College was divided, when Dr. Peaslee was offered and accepted the chair of Gynecology. At about this date he also occupied for a short time a professorship in the Albany Medical School. On the reorganization of the Medical Department of the Woman's Hospital of the State of New York, in 1872, he was made one of the Attending Surgeons and held this position, together with his professorship in the Bellevue Hospital Medical College, at the time of his death.

He published in 1848 "A Synopsis of the Course of Lectures on General and Human Physiology, in the New Hampshire Medical Institute." But the earliest special contribution made by Dr. Peaslee to medical literature was, at least so far as I have been able to ascertain, a report of a case of amputation at the shoulder joint, published in the New York *Journal of Medicine* in 1853.

The following year a monograph was written by him on the fetal circulation. Several articles afterward appeared in the journals bearing on the treatment of ovarian tumors; the most important one of these being in regard to the washing out of the peritoneal cavity. His later articles were all contributions on gynecological subjects. But unfortunately the time allotted to me has been so short that I have been unable to furnish a list of his contributions.

He delivered an introductory address "On the Comparative Intellectual Standing of the Medical Profession," to the class of the Medical School of Maine, in March, 1851, and this was published. He gave the introductory address to the New York Medical College for the year 1852, and also the anniversary discourse delivered before the New York Academy of Medicine, November 25th, 1858, together with several addresses before other medical and literary societies.

In 1857 he published in Philadelphia, "Human Histology, in its Relations to Descriptive Anatomy, Physiology, and Pathology," in which were given for the first time, by translation, the experiments of Robin and Verdell on anatomical chemistry. But the one great work which will identify him with his generation is that on "Ovarian Tumors, their Pathology, Diagnosis, and Treatment, especially by Ovariotomy," published in New York, 1872. To this work he contributed but little original matter, beyond his personal experience, which had been large at that time. He, however, presented a digest of the whole subject in so thorough and masterly a manner that this work is destined to be a classic and a landmark as it were. It will be the future starting point for the literature of this subject, as an original patent is in the searching of a title. There will be no need to go beyond his researches on this subject, as they are exhaustive.

For one feature in his work he has often expressed the greatest satisfaction, that he had been able to establish for Dr. Ephraim McDowell the credit of being the first ovariotomist.

In consequence of his labors, the world has at length given us credit for this great discovery, of no less value than many others which we can claim to have originated in our country, for the prolongation of life and for the mitigation of suffering.

Dr. Peaslee held the position of president of this society from 1867 to 1868 and he has likewise been the president of the Academy of Medicine, of the Pathological Society, of the New York Obstetrical Society, and of the American Gynecological Society, to which he was elected at the last meeting. He has also been the president of the State Society of New Hampshire, and was a permanent member of the Medical Society of the State of New York. He was a Fellow of the London Obstetrical Society, and a corresponding Fellow of the Obstetrical Societies of Berlin, Boston, Philadelphia, Louisville, etc.

Dr. Peaslee died from pneumonia, on the 21st of January last, after six days' illness and within one day of terminating his sixty-fourth year. Until within a few hours before his death, the progress of the disease had caused no apprehension. He sank from a malady he had many years feared, and with the conviction that he would not survive an attack. He died from overwork, and yet to the hour of his last illness he possessed a degree of endurance which was almost incredible. To the last he was busy in the midst of all the cares and responsibilities of a large and exacting practice. He seemed to go through his daily toil regardless of all personal comfort, or the claims for rest from approaching age. But a few short months have passed since, in this very room and on the occasion of Professor Crosby's death, Dr. Peaslee, with an example before him, warned the profession against this sacrifice to overwork. How often are we, as a profession, accused of this, I may say, a characteristic trait? When in possession of such accurate knowledge that we are able to give the needed advice to others, and even exact a rigid observance, yet personally we utterly disregard our own teaching.

Dr. Peaslee, at some time in his life, had lectured on every branch of the medical profession. With the exception of Dr. Physic, we have not another instance where the lecturer was equally proficient in the practice. But if we compare the extent of professional knowledge in Dr. Physic's generation and the acquirements of the present day, Dr. Peaslee will stand alone. Notwithstanding the incessant claims of his profession, he kept up through life his collegiate training in the classics, his taste for mathematics, and had acquired the knowledge of one or more modern languages. Few men in the profession were more familiar with the literature of our own language.

As if there were some limit to the usefulness of knowledge, we often find a man's brain may become so overstocked, as it were, that he is unable to make any practicable use of it. I may use the simile that, while there are many good corps commanders, we find but few able to make the proper distribution when placed in possession of the material forming a large army. But with Dr. Peaslee, his knowledge was always available and in the most accurate manner. As a member of the various medical societies of this city, Dr. Peaslee was as regular an attendant as any other, and was so in the discharge of a duty. It was seldom that he was not called upon to take some part in the discussions. We are all familiar with the fact that after he had spoken in his terse and logical manner, there remained but little to be said.

I have been informed that Dr. Peaslee in early life was an expert operator and was fond of the practice of general surgery.

He was an excellent ovariotomist, but began his gynecological studies too late in life to become a dexterous operator in this branch of surgery. However, his judgment was always excellent, he was painstaking and careful, so that his results were good. But I think his forte in later life, at least since I knew him, was as a diagnostician and at the bedside. After he had had the time and opportunity to form his opinion, I could place more reliance on his judgment than on any other member of the profession within the scope of my acquaintance.

Dr. Peaslee was so evenly balanced that we look in vain for the rough points of human nature which generally stamp men of character. In appearance he was as fragile and as cold as an icicle from his own native land. But appearances in his case were deceptive. He was not wanting in endurance, as we have seen, and from my own personal knowledge I can say he possessed a generous and kindly nature. He was the type of a man whose whole action of life was based on a deep religious conviction; he was consequently truthful, with the incentive to always discharge his duty, from a sense of duty, regardless of consequences. To do what he thought was right prompted every action of his life. He was as free from cant and as tolerant of the views of others as any man I ever saw. Through human judgment he was, of course, liable to err, but no amount of sophistry or argument would avail, until he had, by a mental process of his own, weighed the merits of the case as then presented. I have known Dr. Peaslee for nearly ten years and our relations were closer than would be expected from the difference in our ages. My opportunities have been good for seeing him under various circumstances. From this knowledge of him I can conscientiously state that I never heard him make an unjust criticism on the course of another, or do what could be termed a mean act. His death cannot but be lamented by all who knew him and who could appreciate his worth. Yet every thoughtful man must realize that no one is absolutely essential—on his death his place is immediately filled, and soon as perfectly as if he had never lived. He himself, in the natural course, is soon forgotten, but a man's deeds done in this life, and the consequences, be they for good or evil, live after him until the end of time. I know of no evil done by him, while few men have been instrumental in doing more good than Dr. Peaslee, in a quiet, unobtrusive way, as a teacher and in relieving humanity.

Thos. Addis Emmet, M.D.

CORRESPONDENCE.

THE AUTHENTICITY OF DR. ROSE'S CASE OF FOUR SUCCESSIVE RUPTURES OF THE UTERUS IN THE SAME PATIENT.

To the Editor of The American Journal of Obstetrics.

Chicago, February 9th, 1878.

Dear Sir:—In consequence of your intimation, some time ago, that the case of "Four successive Ruptures of the Uterus in the same Patient," reported by Dr. J. M. Rose, of West Winfield, N. Y., in the *Chicago Med. Jour. and Ex.* for Aug., 1877, is looked upon with incredulity by the profession in this country, and has been abstracted by one of the editors of the "*Centralblatt für Gynäkologie*" (Nov. 10th, 1877), with a protest against his "being suspected of believing it," thereby impugning the veracity of a member of the profession in the United States, I have endeavored, through my friend Dr. Lester Curtis of this city, to collect proof of the correctness of the report, partly with the view of establishing beyond question the occurrence of so unique a case, partly in order to clear a member of the profession from the imputation of deception either through ignorance or design.

I will first give a condensed abstract of the case as originally published by Dr. Rose, and then reproduce his answer to the letter of inquiry by Dr. Curtis.

The patient, an Irishwoman, 32 years of age, and the mother of two children, was taken with labor-pains June 1, 1869. Five hours after labor began, rupture of the uterus occurred. Dr. Rose passed his hand into the uterus, and through the rupture into the abdominal cavity. He succeeded in finding the feet, which he brought down and delivered a dead child, together with the afterbirth, which was also in the cavity of the abdomen. The operation was well borne, and was followed by but little peritonitis. Recovery was complete and rapid.

The next labor occurred in April, 1872. After three or four hours the pains suddenly stopped and the head receded. On passing his hand into the uterus, Dr. Rose found that rupture had again taken place. He delivered as before, by passing his hand through the rent in the womb and bringing down the feet. The patient was able to do light work in about a month. In May, 1874, she was again taken with labor pains, which lasted about two hours and stopped suddenly. The cessation of the pains was followed by abdominal tenderness and feelings of faintness, but the physician who attended her told her that the pains had stopped and might not come on for a week or more. Two days later Dr. Rose saw her, and found the os partly dilated and the uterus again ruptured. Both child and placenta lay in the abdominal cavity. Delivery was effected by version as before, but this time the tenderness was so great that chloroform had to be given. The child had been dead so long that the skin peeled off when it was handled. The rent was transverse and in the posterior part of the womb; "it felt as though half of the womb had been cut off with a knife." None of the contents of the abdomen escaped through the rent. Twelve days after the operation the patient was sitting up. The last labor came on February 28, 1876. After the waters broke, the patient said that "she felt a great movement of the child—she felt it pressing up under her ribs." Twenty minutes later Dr. Rose saw her, and on making an examination was just able to reach one foot with the finger. Introducing his hand, he brought down the feet and delivered a living child. The patient suffered no more than is usual after an ordinary delivery.

WEST WINFIELD, N. Y., Dec. 14th, 1877.

DR. L. CURTIS.

DEAR SIR:—Yours of the 6th inst. was received, and in answer I would state that, much to my regret, I am unable to obtain any written evidence from Dr. King, who is a paralytic, but he remembers the cases he saw with me and has no doubt that my diagnosis was correct.

The President of the Herkimer County Society is Silas Ingham, Jr., Little Falls, Herkimer County, N. Y. The Secretary is A. Walter Suiter, Herkimer, Herkimer County, N. Y. I would also refer you to Dr. W. H. H. Parkhurst, Frankfort, Herkimer County, N. Y., and Dr. John P. Sharer, Little Falls, N. Y.

In explanation, the rupture was on the posterior lower third of the uterus, transverse in relation to the fourth labor. The situation of the rupture was the same as in the others. It was probably a head presentation, and as the womb gave way, the contractions forced the fetus into the cavity of the abdomen, it turned a half somersault, leaving the feet near the rent, so that I could reach them in making a digital examination. I immediately introduced my hand, grasped the feet, and in a few minutes delivered a living child, after which I delivered the placenta, which came away without any assistance, except a little traction on the cord. The proof of the moving of the child to the upper portion of the abdomen, was that the fetus was in the abdomen, and that the mother was conscious of motion of the child; and after the child was delivered, I, in making an examination for the placenta, passed my hand through the rent, carried my fingers on the outside of the womb, and at the same time traced the cord into the womb. In regard to the opinion of the profession, I don't wonder that they are surprised and express doubt, for I was surprised myself that the woman lived. I never had but one case before or since, and that patient died within one hour. I think I have had experience enough to not be mistaken. I was very thorough in my examination both before and after the delivery of the child. I passed my hand to the upper portion of the abdominal cavity, and could feel the liver and convolutions of the intestines. Also had Dr. King, a very able physician, to examine the case with me at two different times, the first and third. Both of us made thorough examination after the child was delivered. There is no chance for mistake.

Yours very respectfully,
J. M. Rose.

The reference to the officers of the Herkimer County Medical Society is made, because the case was reported to that society at its annual meeting in June, 1874, about one month after the third rupture. The fourth rupture did not occur till February, 1876, as the published report shows.

Letters were received and shown me by Dr. Curtis from Drs. Ingham, Suiter, and Parkhurst, speaking in the highest terms of the "unimpeachable integrity and truthfulness" of Dr. Rose, who is a graduate of the then celebrated Fairfield Medical School in 1837, and who is "universally regarded by the profession in this vicinity (Herkimer County) as a very competent observer, and a careful and accurate diagnostician." Dr. King is spoken of as "an experienced physician of acknowledged ability."

In face of this documentary evidence of the professional standing and ability of Dr. Rose, I see no valid reason for doubting the absolute correctness of his diagnosis and statements in the case in question, and trust the profession at home and abroad will concur in this opinion. Yours truly,

W. H. Byford.

THE BARNES-PLAYFAIR CONTROVERSY.

To the Editor of the American Journal of Obstetrics.

London, 31 George Street, Hanover Square, W., January 28th, 1878.

Sir:—I have read with considerable surprise what seems to me a very unnecessarily angry letter from Dr. Barnes in your January number. Dr. Barnes' grievance is that I have not acknowledged, in every instance, the source from which the illustrations in my book were taken.

When I followed Dr. Tyler Smith's example on this point, it was because, to quote his words, "obstetric authors of all countries, from the time of Mauriceau downwards, had copied each other so freely without acknowledgment as to render it difficult or impossible to trace the originals." It never occurred to me that any mistake could arise as to wood-cuts so recent and so well known as those of Barnes. That you, sir, should have fallen into the error of supposing them to be mine I regret as much as any one; but those of your countrymen who have done me the honor of reading my book—and I am proud to know that their number is not small—will, I am sure, acquit me of wishing to mislead as to what is or is not my own.

I have frequently the advantage of meeting Dr. Barnes, and had he ever hinted to me his dissatisfaction, I should have had much pleasure in apologizing for any annoyance I had caused him, and should have assured him of my willingness to alter the plan I had adopted in any future edition. This, indeed, I had determined to do with regard to the edition now passing through the press, before I saw Dr. Barnes' reclamation.

The illustrations are, after all, not very important ones, and it may well be doubted if they are worthy of being written about in the tone Dr. Barnes adopts. In the course of one short letter, he hints pretty plainly that I have intentionally taken credit to myself for the work of others; he acuses me of ignorance, indolence, and of lack of originality; and he likens me to a Frenchman whose morals are not of the strictest, and who goes about appropriating the good things of others whenever they suit him.

Writing such as this is fortunately a rarity in our profession, and I shall not insult the good taste of your readers by making any comment upon it.

I am, yours truly,
W. S. PLAYFAIR.

THE AMERICAN EDITION OF BARNES' OBSTETRIC OPERATIONS.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

NEW YORK, 8 East 15th Street, March 14th, 1878.

MY DEAR DOCTOR:—Dr. Robert Barnes, of London, in a letter published in the last (January, 1878) issue of your journal, in reference to certain illustrations in Reimann's and Playfair's obstetric works, which he claims should be accredited to him as their author, has seen fit to make some unjust (to use a mild expression) remarks about the American edition of his "Obstetric Operations," because the same wood-cuts do not appear in the latter.

Dr. Barnes' lectures were first published in the London *Medical Times and Gazette* for 1868. At the suggestion of Prof. T. G. Thomas and the late Prof. George T. Elliot, I proceeded, at the end of the same year, to edit the lectures for the purpose of making them available to the medical profession of this country. Deeming it but courteous to inform Dr. Barnes of my intentions, and thus afford him an opportunity to make any objections or suggestions, I accordingly addressed a polite and flattering letter to him on the subject, and especially asked if he objected to my proposed issuing of his lectures in book form. Knowing, however, that in name I was then unknown to Dr. Barnes, Prof. T. G. Thomas kindly gave me an introductory letter to inclose with my own, and Prof. Elliot said he would write direct to him in my behalf. Presuming naturally that Dr. Barnes would readily concede to the compliment offered, I proceeded with my task without waiting for his expected assenting reply.

Weeks and months passed without any notice or communication of approval or objection being received by myself or Profs. Thomas or Elliot in reply to our letters. Feeling, very justly, and with the approval of my friends, that Dr. Barnes' silence gave consent, and that his apparent want of courtesy in not taking the least notice of letters from two at least equally distinguished obstetricians as himself, entitled him to be wholly ignored in turn by me, I proceeded with my nearly completed task, placing the material in the hands of the Appletons for publication in 1869, by whom the volume was issued early in 1870. So much for Dr. Barnes' equivocal statement, "*I never sanctioned it.*" He should have said, "*I never objected to it.*"

In the mean while Dr. Barnes also published his lectures in book form in London, making a few additions to the original lectures. Obtaining an early copy of the English edition, I added to the American one, then in press, all the new matter excepting the two wood-cuts referred to, which were omitted solely to avoid further delay in the issuing of the book. The latter appeared but a few weeks later than the English edition, and was as complete as the latter, excepting the wood-cuts referred to above. These wood-cuts were never published in the original lectures in the London *Times and Gazette* from which the American edition was compiled, of which latter fact Dr. Barnes is well aware, his lectures appearing in the medical journal in 1868, and his volume in 1870, after I had communicated with him. So much, then, for his "*disclaiming it as a spurious production.*"

In conclusion, Mr. Editor, I will simply quote Dr. Barnes' own language, with a slight transposition of three words italicized for the purpose. "This reclamation will, I trust, be useful by proving by flagrant example what wrong may be done to *compilers* by *original workers*, who neglect the plainest canons of literary morality," and, I will add, the commonest rules of courtesy. Apologizing for occupying so much of your valuable space, I am, my dear doctor, sincerely yours,

B. F. Dawson, M.D.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Reported by Matthew D. Mann, M.D., Secretary.

Stated Meeting, October 2d, 1877.

The President, Dr. T. G. Thomas, *in the Chair.*

Dr. H. T. Hanks presented a specimen of

A UTERUS WITH INTERSTITIAL FIBROIDS AND MULTIPLE CYST OF THE RIGHT OVARY,

and read the following history.

"The specimen which I show you, consists of the uterus and its appendages. It was removed from a widow over 90 years of age, who died on the 10th of July, 1877, from cirrhosis of the liver

The specimen is of interest, as it shows several small fibroid tumors of the uterus, and one quite appreciable multiple cyst of the right ovary, and several small cysts of the left Fallopian tube and ovary.

The smaller fibroid is just under the peritoneum, a little to the right of the median line of the anterior wall of the body. I have divided it with the bistoury.

The larger fibroid originated and grew in the anterior wall of the body, and has been enucleated, and can be rolled one side, showing in a marked manner the ease with which such tumors can often be enucleated while the capsule is incised.

The third fibroid was underneath this larger one, which has impinged upon it and caused it to assume a distinctly flattened appearance. This, too, has been partially enucleated. Back of this flattened fibroid is found the inner layer of muscular fibre of the anterior wall, and the mucous lining.

The point of interest, it seems to me, is the fact that the smaller fibroid has been crowded outward until it has assumed the sub-peritoneal variety of fibroid; while the inner or flattened tumor has been crowded inward until it became the submucous form. The cysts are also of interest, as showing the single and the multiple variety. The larger one, springing from the outer extremity of the right ovary, is apparently in contact with and adhering to a cyst which really springs from the Fallopian tube, thus forming a multiple cyst.

Upon the fimbriated extremity is a minute cyst. (When first removed, all these cysts were much more distinct than at present, as the contents have exuded and mingled with the solution in which the specimen has been preserved.) The left Fallopian tube and ovary show another small cyst, which lies between the two and is attached to both. The cysts on both sides show distinctly how difficult it must be, by physical examination alone, to differentiate between a cyst of the ovary and a cyst of the Fallopian tube or broad ligament. The patient, during the last eight years, has suffered from no pelvic or uterine disturbances.

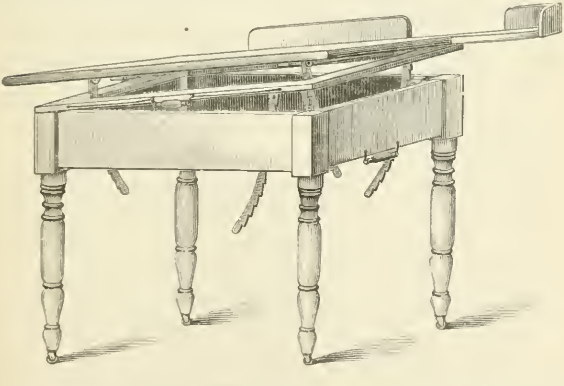
She had, during the years 1872 and 1873, several severe attacks of biliary colic.

I show you the gall stones removed from the gall-bladder of the same patient, which, from their number and great size, are at least a curiosity.. There were five in all, one having been accidentally broken."

Dr. C. Cleveland presented the model of

A GYNECOLOGICAL EXAMINING TABLE,

invented by Dr. Samuel W. Francis, of Newport, R. I., and made the following remarks:—



"This model represents admirably the table designed by Dr. Francis for office use. It is, of course, chiefly useful for gynecological examinations, but not exclusively so. It is constructed on the principle of the double inclined plane, and its mechanism is simple and unique. A minute description is unnecessary, for inspection gives at once a perfect understanding of its working. The two planes may, for convenience, be spoken of as two tops, the first being hinged, on the right side, to the under one, and this in turn to the table at the back. It will be seen that the under one is merely a frame.

To each top, at the side opposite to where it is hinged, are attached two curved serrated arms. Each can be raised as high as its arms will permit, being prevented from falling by ratchets which catch under the teeth. To lower either, it is only necessary to pull upon the handle which is attached to a cord connected with an escapement on that side.

For raising and lowering, the same mechanism now in use upon dentists' chairs might be employed.

The tables can, of course, be made of any size.

This model can be seen at any time, at Caswell, Hazard & Co.'s, who design manufacturing them to order."

Dr. Dawson showed a

NEW SELF-RETAINING BIVALVULAR SPECULUM,

designed principally for use in Sims' position.

Dr. Mundé, referring to the use of different specula, asked if there was any possibility of being misled in diagnosis by the use of Sims' speculum.

Dr. Thomas answered that he knew of no case in which the use of Sims' speculum could lead to an erroneous diagnosis. He considered it in every way the best speculum in existence.

Dr. Byrne reported a case of a supposed

SLOUGHING INTRA-MURAL FIBROID COMPLICATED WITH PROCIDENTIA UTERI

of five years' standing. When first seen, there had been retention of urine for twenty-four hours. The bladder protruded from the vulva; six pints of urine were withdrawn, and the prolapsed mass reduced. The uterus and tumor were very closely connected. The introduction of the sound was followed by a dark offensive discharge, which was increased by pressure. There was no pain referable to the uterus at any time. Intra-uterine injections of carbolic acid water were frequently used, and after six weeks, the uterine cavity measured only four inches. The patient's health improved very rapidly under this treatment, and she is now in very good general condition. Dr. Byrne considered it to be a sloughing intra-mural uterine fibroid.

Dr. Thomas suggested that it might just as well be a cancerous tumor.

Dr. Byrne considered that the absence of pain and the great improvement in general health following treatment would preclude this diagnosis.

Dr. Thomas was of the opinion that both conditions might exist with uterine cancer. In support of this opinion he related the following case of

UTERINE CANCER, INVOLVING THE WHOLE ORGAN, WITHOUT PAIN.

The lady came from a distant State about eight months ago, suffering from profuse metrorrhagia and consequent great exhaustion.

The vagina was filled with a putty-like substance, the accumulation of vaginal suppositories introduced by the husband, by the directions of the family physician. This was removed, and a large epitheliomatous growth found springing from the inside of the cervix. Chromic acid was applied, and the mass sloughed away. Styptic injections were then employed, and the patient improved greatly under the use of tonics, and finally returned home.

A few weeks ago, she returned to this city, looking and feeling extremely well. An examination showed the uterus to be completely hollowed out by this new growth, leaving only a thin shell of uterine tissue. To control the hemorrhage, her physician had been regularly tamponing the uterine cavity with cotton soaked in James' styptic (sat. sol. of resin in alcohol). Fearing that perforation and fatal peritonitis might occur at any moment, she was advised to return home at once. The interior of the uterus looked like a granulating surface covered with flabby excrescences. This patient had never experienced the slightest pain in the region of the uterus.

Dr. H. F. Walker reported a

CASE OF PUERPERAL SEPTICEMIA, WITH ABNORMALLY HIGH TEMPERATURE, TREATED BY INTRA-UTERINE INJECTIONS; RECOVERY.

"The patient, Maggie M., an Irishwoman, unmarried, twenty-five years old, was admitted to Bellevue Hospital, May 12th, 1877, while in labor. She was wearied and worried, having sought entrance to several hospitals during the previous week;

and, having taken little nourishment, she was prostrated in strength. Her pains were slight, the os little dilated, and the head of the fetus presenting. She slept most of the night of May 12th, and next morning, at 11 o'clock, the cervix being dilated, the waters discharged. The fetal heart could be heard in the right iliac fossa. At 5 o'clock, the head was well down in the pelvis, but the pains had ceased entirely. One drachm of fluid extract of ergot was given, and, after a lapse of twenty minutes, the pains became vigorous, recurring at intervals of three minutes for half an hour; then failing, a second dose of ergot (ʒ i.) was given with the same result. The fetal heart could not now be heard, and the woman's strength was markedly less. Chloroform being administered, the forceps were applied, and a still-born female child, eight pounds in weight, was delivered. In delivery, the perineum was ruptured to the second degree. The placenta followed without trouble; there was no special loss of blood, and the uterus contracted firmly. One drachm of U. S. P. solution of morphia was given. She did not sleep till 5 A.M., being slightly delirious. At 12 midnight, her temperature was 103° F.; at 4 A.M., 104°, and at 4 P.M., it was 105°. At 4 P.M. was the first time I saw the patient. She had entered hospital after my Saturday visit, and had been delivered by my house physician on Sunday. Her pulse was good, 120 to the minute. There was slight hypogastric tenderness. The discharge was without odor, but the tissues of the vulva looked purple and edematous. The skin of the patient was somewhat yellow; tongue coated; digestion natural. Ordered verat. viridis tr. gtt. v., p. r. n., and an intra-uterine injection of carbolized warm water, which was given at 7 o'clock P.M. The injection, at blood-heat, contained acid carbol. gtt. xx. to each pint. Quinine was given gr. v. ter die at this time, and during all the patient's illness. At 12 midnight, her temperature was 102°, and her pulse 100.

May 15th.—Patient is highly jaundiced. The discharge is extremely offensive. At 8 A.M. the pulse was 96, and the temperature 104°. Up to this time three doses of veratrum had been given. The injection was again used, the temperature falling to 102¼°, and so remaining till 4.30 o'clock, when it rose to 105°, and the pulse to 128 per minute. Veratrum viride given, and injection used. At 12 P.M. the pulse was 84°, and temperature, 101¼. There was considerable tenderness over the uterus, a scanty, highly-offensive lochia, and a still deeper jaundice. The patient was bright and responsive, inclining to talk. Immediately after the injections she felt better, and inclined to sleep.

May 16th.—From the last record till 1 P.M. the injections were only vaginal douches. The temperature gradually rose till 4½ o'clock, when it was 105¼°. Fifteen minutes after injection within the uterine cavity, the temperature fell 1¼°, and the patient slept an hour.

May 17th.—The highest temperatures of the day were at 10 A.M. and 5 P.M.; viz.: 105¼° and 104¾°. Five injections given during the twenty-four hours.

May 18th.—The highest temperatures were at 10 A.M. and 4 P.M.: 104¼°. Four injections were given during this day. The injections were now given irregularly, but were repeated on an average once in six hours.

May 19th.—Highest temperatures were at 4 A.M. (104°) and 8 P.M. (103¾°). The range of temperature was lower, and only three injections were given. The jaundice has lessened, and the patient is bright and very cheerful. She eats with relish rice and milk, and drinks wine and milk every two hours. The lochia are less offensive; some sloughs have been discharged.

May 20th.—Her highest temperature was at 4 P.M. (104½°). Three injections given.

May 21st.—Patient's highest temperature was half an hour after midnight (102¾°). Her lowest, thus far in her illness, 100¼°, was at noon. Two injections given.

May 22d.—Highest temperature at morning; midnight, 102°, and at 8 P.M., 102¾°. Lowest of the twenty-four hours, 100¾°, at 8 A.M. The jaundice has disappeared. The injections were given three times

May 23d.—At 2 A.M. patient had a chill; temperature, 107°; at 4 A.M. her temperature was 108°; falling at 6 A.M. to 105°; at 12, midday, to 102½°; to rise at 3 P.M. to 105½°, and fall at 10.45 P.M. to 100°. Two injections were given.

May 24th.—Highest temperature at 10.45 A.M. (106¼°), lowest at evening; midnight, 100°. Two injections given.

May 25th.—Highest temperature at 6 P.M. (105¾°), lowest at evening; midnight, 101°. The higher temperature tending to persist, three injections were given.

May 26th, 27th, and 28th.—At noon the first day and 6 P.M. the two last, she had a temperature of 106°. The lowest, 101°. The uterus was injected three times each day. May 29th and 30th, highest temperatures were 105½° and 105°. Two injections were given each day. From this time there was a gradual subsidence of the highest temperatures, but with great irregularity as to time.

June 1st.—The temperature, which heretofore had been taken every two hours, was now taken morning and evening.

	A.M.	P.M.	
June 1st, temperature varied between	101°	103½°.	Uterine injections continued, but their number not noted.
" 2d, " " "	101½°	102°.	
" 3d, " " "	100½°	102°.	
" 4th, " " "	99¾°	101¾°.	
" 5th, " " "	99¼°	101¾°.	
" 6th, " " "	99½°	101¾°.	

As now the morning temperature had been normal for three days, the intra-uterine injections were stopped for the first time since their exhibition.

The effect was noticeable.

	A.M.	P.M.
June 7th, temperature varied between	100½°	104¾°.
" 8th, " " "	99¾°	104½°.
" 9th, " " "	100¼°	104¾°.
" 10th, " " "	100°	104 .
" 11th, " " "	99°	101½°.
" 12th, " " "	98½°	104½°.
" 13th, " " "	99°	103¼°.
" 15th, " " "	100¼°	103¾°.
" 19th, " " "	100	102 .
" 23d, " " "	101½°	103¾°.
" 27th, " " "	98½°	100½°.

There were slight excerbations of temperature till July 10th. After this time, the temperature was normal at all times. The perineum healed by granulation and contracted, so that there was full support to the vagina and uterus. July 23d, patient was discharged well.

The most marked features of this case were, to me, the extreme rise of temperature, 108°, which proved not to be a fatal temperature. Another was the immediate effect of the intra-uterine injections. In every instance when employed (and they were used several times daily, for nearly four weeks), the temperature fell, save twice. In all instances the patient expressed herself as feeling better after their use, and was inclined to sleep.

Another was the immediate effect of omitting the use of the douches. The temperatures, both morning and evening, were higher for several days. Certainly, the douches diminished the intensity of the septic fever, if they did not cure it. Another was the facies of the patient. Save her jaundice, the patient's appearance, during all her illness, was that of one but triflingly ill. She was always responsive, and was ready with her smile. She only complained of weariness. The thermometer was the only means by which the gravity of her symptoms could be demonstrated."

Dr. Gillette remarked that, in Charity Hospital, it is now a standing rule to wash out the uterine cavity at any time after delivery, when the temperature reaches 102°. The temperature invariably falls after the injection, and certainly, in very many cases, the patient is saved thereby from septicemia. He also gives carbolic acid—four grains every four hours. If the stomach does not retain the acid, it is given hypodermically injecting ʒ ij. of a two-per-cent solution each time, in four punctures, twice a day. It is surprising to see how quickly this treatment reduces the fever.

Dr. Chamberlain said that, of late, he had given to all of his patients in whom septicemia was feared, the sulpho-carbolate of soda, in doses of 5 to 20 grains, once in three hours. There had been no interference with food or other medicine, and he had believed that the extension and continuance of the condition had been limited.

He had also directed that a small lock of cotton, dipped in a five-per-cent solution of bromine, should be placed in each pudendal napkin of the puerperal woman.

A faint atmosphere of bromine was thus communicated to the entire surroundings of the patient. Bromine is undoubtedly one of the most powerful septicides, and has been accepted as such in military hospitals and in the treatment of diphtheria.

Dr. H. J. Garrigues presented the history of a case of

PUERPERAL ECLAMPSIA AND DIPHTHERITIC INFLAMMATION OF THE VAGINA AND UTERUS.

"On the 25th of May, 1876, I was called by Dr. Wunderlich to see Mrs. D. She was 22 years old, rather small and thin, of a lymphatic and nervous constitution. She had formerly enjoyed good health, and was now in her first pregnancy, about eight months advanced. During the last couple of months her feet had been swollen, but no edema had appeared in the face or the hands. Six weeks ago, she had had a severe attack of cardialgia, and for the last eight days she had complained of a severe headache. At 8 o'clock A.M. she was taken with convulsions, and had three attacks before Dr. Wunderlich could be summoned. He gave an enema, a medicine with senna, and made her inhale chloroform till narcosis was brought on.

When I saw her, a little later, she lay on her right side; her face was flushed and slightly cyanotic; respiration free; pulse 116, full. She did not answer any questions, and did not seem to hear them, but when touched, she whimpered, and made averting movements.

The fetal heart-sound was heard to the right of the umbilicus. By vaginal examination the vertex was found presenting itself rather deeply. The head was small. The os had the size of a five-cent piece. No pains were present. The left lower limb was considerably swollen, dense, elastic, and did not retain the impression of the finger. The urine was charged with albumen. We applied an ice-bag to the head and the spine.

A new attack coming on in the afternoon, the inhalation of chloroform was repeated, and a little later, one-fourth grain of morphia injected subcutaneously. The os dilated very little.

Towards night she got so suddenly severe labor-pains that a physician in the immediate neighborhood had to be called in, and at 11 P.M. she brought forth a dead child.

During the first week after her confinement she was pretty well, but on the 1st of June she was seized with rigors, soon followed by two weaker chills, and the next morning by another. She complained of lumbar pain. The right renal region was very sensitive, the uterus of natural size, retroflected and sensitive; no exudation could be felt around it. In the vagina were found several ulcers covered with a light-gray slough. A large and deep one was situated on the left wall corresponding with the level of the os; several flat ones were spread over both sides of the vagina and at the posterior circumference of the introitus vaginæ. Pulse 120, temperature 101°. The urine contained much albumen. We applied a linseed-meal poultice to the lumbar region, covered all the ulcers with iodoform, and ordered the vagina to be syringed every second hour with carbolized water.

The next morning (June 3d), the urine was pale, turbid, neutral, and contained less albumen (about one-tenth of the total volume), very little renal and vesical epithelium, but granular casts. Pulse 105, temperature 100°. A medicine with tincture of chloride of iron was prescribed. It was found during the day that sometimes the albumen was absent.

The following day (the 4th), she felt less pain, the pulse went down to 94, and the temperature to 99°. The upper ulcer showed a tendency to healing, but had at the same time spread towards the introitus vaginæ.

The next day (the 5th), the os had a jagged appearance, and a thick, dusky-red mucus dribbled from it. Now we introduced a flexible catheter to the fundus, and washed out the uterine cavity with four ounces of lukewarm water, and injected a drachm of a solution of chloride of iron in equal parts of water.

The next day (the 6th), the ulcers presented a sound base: the mucous membrane of the collum looked much better, and there was only one new spot, little larger than a large pea, which showed the characteristic gray infiltration. The intra-uterine injection of chloride of iron was repeated.

The following day (the 7th), when the treatment was repeated, she screamed and almost fainted, her pulse becoming weak and slow, and the face cyanotic—a state from which she recovered soon after the administration of cologne water, ammonia, and brandy.

The 8th, the ulcers having spread considerably, and a large one having appeared on the posterior wall of the vaginal portion, we resolved upon using a stronger disinfectant, and fearing a similar collapse as the preceding day, from the pain, we put her under the influence of chloroform, and cauterized all the ulcers with a solution of chloride of zinc in equal parts of water, and injected in the uterus, after having washed it out, half a drachm of a solution of the same article dissolved in twelve parts of water.

The 9th, she had suffered much the whole day. In some places, the edges of the ulcers showed a narrow diphtheritic infiltration, and a new large ulcer had formed on the anterior wall of the vaginal portion. The cauterization of the ulcers with the strong solution of chloride of zinc was repeated, which gave rise to some bleeding easily arrested by styptic cotton. A bloody discharge coming also from the uterus, we repeated the intra-uterine injection of the solution of chloride of iron.

The 10th, new infiltration of the edges, cauterization, and intra-uterine injection with chloride of zinc as before. She complained of some pain above the left groin, where a swollen lymphatic gland was found very tender on pressure. Linseed-meal poultice. The swelling disappeared after a few days.

The 11th, the water injected into the uterus returned almost clear.

The 12th, a small new infiltration was cauterized. The sloughs from the caustic began to separate.

The 14th, she became very restless towards evening, and showed beginning spasms in the limbs. A papulous, elevated erythema covered her face, neck, hands, feet, and legs, and gave her an unpleasant feeling of swelling. Lotions with carbolized water gave immediate relief, and at 1 A.M. the exanthema disappeared.

The cicatrization of the ulcers progressed favorably for a week, when diphtheritic infiltration appeared once more in the large deep ulcer behind the introitus, and spread quickly in the newly-formed cicatrice, but was again checked by chloride of zinc, once the strong solution, and a couple of times the weak. After that, the healing process went on undisturbed, and the vagina was only washed with carbolized water several times a day. The cicatrices contracted very much, especially from above, so that the vagina was much shortened. The albumen disappeared from the urine, and she was soon well enough to go to the country, whence she returned in fall with round cheeks and in perfect health. She is now again pregnant, feels perfectly well, and her urine, which has been repeatedly examined, does not present anything abnormal.

This patient was affected by two grave puerperal diseases, eclampsia, and diphtheritic endometritis and kolpitis. As to the first of these two affections, all the symptoms were well marked: cephalalgia, cardialgia, edema, convulsions, unconsciousness, and albuminuria. I will only add a few words about the treatment adopted. All, I think, agree about the usefulness of aperients, but in regard to the other measures, opinions differ still rather much among those who have the opportunity to see a large number of cases. Blood-letting, formerly the first means resorted to, has in most countries been superseded by anesthetics and narcotics, such as chloral, morphia, and especially chloroform, but in France it still has a zealous defender in Depaul,[1] and as he is the official teacher of the students in Paris in obstetrics, it is probable that his pupils in general follow his advice. In our case, we abstained from using it, although the flushed and somewhat cyanotic face and the full pulse might be considered as an exhortation to employ it. But the spare body and highly nervous constitution of the patient brought us to regard it as better to avoid so debilitating a measure, and diphtheritic inflammation occurring later, we had only to congratulate ourselves upon this resolution, which had left her strength enough to resist the attacks of this pernicious disease. We tried to combat the hyperemia of the nerve-centres by the application of ice, which at the same time reduces the irritability of the nerve-cells, so as to counteract reflex action. Chloroform worked well, and had only to be used twice, except as an anesthetic before cauterization.

Another mooted question is, whether labor should be induced and ended artificially in order to empty the uterus as soon as possible. I think the right way is to further labor and delivery as much as can be done, without interfering much with the neck of the uterus; for instance, by rupturing the membranes when the os is sufficiently dilated, by using the forceps when it can be easily applied, etc., but not to institute artificial dilatation of the cervix, which is apt to provoke new attacks of convulsions. Thus, not being present at the time when the os suddenly commenced to give way, we did not interfere until nature ended the pregnancy by a premature birth.

Even as to the proper food to give to patients with albuminuria, authors differ. Elliot[1] employed a non-nitrogenous diet, whilst generally it is thought proper to try to make up for the loss of albumen, sustained by the organism through the condition of the kidneys, by articles rich in nitrogen. We followed this latter plan, and gave our patient plenty of milk, which, by its diuretic effects, presents at the same time the advantage of washing out the casts obstructing the fine canals in the kidneys; plenty of strong beef-tea, eggs, and meat as soon as she could eat it.

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[1] Depaul: Leçons de clinique obstetricale. Paris, 1874, p. 351.

A curious fact is the intermittence of the presence of albumen in the urine observed on a certain day. When we remember that only one side of the lumbar region ever was painful, it is very probable that only one of the kidneys was suffering, and it may, perhaps, be possible that the corresponding ureter from time to time got blocked up, or was contracted in consequence of pain, so that for a time no urine was emptied into the bladder from this side; or, we may suppose that the obstruction took place in the kidney itself. At all events, it must be supposed that normal urine was secreted by the healthy kidney, and temporarily was the only one that reached the bladder.

The diphtheritic inflammation was in this case the more serious of the two affections, and threatened both the life and the conformation of the patient. Several remedies proved unable to check the progress of the disease, until we had recourse to so strong an antiseptic as chloride of zinc, and applied it, not only to the ulcers in the vagina, but to their evident source, the interior of the uterus. Thus we had the satisfaction, not only of saving the life of our patient, but of arresting the destruction in time to avoid abnormal communications forming between the different hollow organs situated in the pelvis, a result doubtless due to the modern topical antiseptic treatment, that attacks the disease where it is accessible, even in so hidden a place as the cavity of the uterus."

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[1] Elliot: Obstetric Clinic, p. 2.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Reported by W. H. GITHENS, M.D., Secretary.[1]

Stated Meeting, December 6th, 1877.

The President, JOHN H. PACKARD, M.D., *in the Chair.*

SCORBUTUS AND PURPURA HEMORRHAGICA OCCURRING DURING LACTATION.

DR. ROLAND G. CURTIN read the following history:

"Mrs. A. M., Irishwoman, 26 years old, was delivered of her first child, January 3d, 1877, about one year after marriage.

Previous to her marriage, she had been in poor health—overworked, thin, pale, and forlorn, but had suffered from no actual sickness. After marriage, and especially during pregnancy, her health was greatly improved, although she was subjected to considerable privation, sometimes eating little more than bread and tea, for days together. Her labor was normal. The child, which was a vigorous one, was nourished by a full supply of milk. The mother continued to live almost exclusively on bread and tea. At the end of the second month of lactation, she felt weak and debililated, and about this time she was attacked by the affection about to be described.

The first symptom noticed was general itching of the surface, which caused her to closely examine her bed for the supposed cause. Upon inspecting her skin, there were found numerous minute bright-red or dusky spots, which were not raised above the surface. These spots were scattered over the body, limbs, head, and neck. The spots rapidly changed in character, many coalescing into patches varying in size from a split pea to a silver dollar They appeared first on the legs, and then in small successive crops over the body, neck, scalp, and finally on the buccal mucous membrane, the palate, tongue, and lips. The eruption on the skin, for the most part petechial in character, though occasionally, notably in popliteal space of left leg, in sufficiently large patches to deserve the designation of ecchymoses. The petechiæ itched when they first made their appearance, and occasionally the scratching would bring out ecchymotic spots like strings of beads, resembling vibrices.

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[1] In the report of the meeting of Sept. 6th, 1877 (January number, p. 162), it was accidentally omitted to state that the inventor of the instrument for the insertion and safe expansion of sponge-tents, exhibited by Dr. Reuel Stewart, is Dr. James A. McFerran, of the Gynecological Hospital of Philadelphia.

The lesions of the lips, buccal mucous membrane, tongue, palate, and within the nose, deserve separate mention. These were not very numerous at any time, but were continuously present. They appeared in the form of minute hemorrhages under the mucous surface, which rapidly rose to a bleb filled with blood, which soon after escaped, leaving a shallow erosion; the latter enduring for some time. About a week after the beginning of the attack, the patient perceived certain circumscribed "black and blue spots," with a central induration under the superficial tissue, on the legs; these were followed by others, appearing as the old ones faded away, and involving the legs, thighs, and arms, but not the trunk or neck. When these indurations or "lumps" (as the patient designated them) first made their appearance, they resembled nothing so much as "black and blue spots" on the skin from bruises. The discoloration was generally elongated in the direction of the length of the limbs—one measuring 3 inches in the long diameter, and 1½ inches the other way. The centre of the "black and blue spots" was dark, shading off until the edges were of a light-yellowish hue.

On handling them, however, in the centre there could be felt dense bodies, circumscribed, roundish, and somewhat flattened. Though they caused a sufficient degree of elevation of the skin to be felt by the hand, yet they were situated in the subcutaneous connective tissue; the integument being freely movable over their surface. They were in fact just such hemorrhages as those observed in the superficial layer of the skin, only occurring in the deeper system of capillaries.

Their surface appearance changed rapidly, the color passing quickly from blue to brown in the centre, with a yellowish areola; the induration passed away more slowly. Occasionally a fresh hemorrhagic induration would occur in the seat of a former one, just as the former one was passing away. Thus, a certain induration on the dorsum of the foot made its appearance in the usual form, and at the end of two or three weeks had nearly disappeared, when a fresh hemorrhage suddenly took its place in the same locality, and proceeded through the same series of changes. In size, these lesions ranged from that of a bean to that of a walnut. At no time did they spontaneously give rise to pain, although they were always sensitive to the touch. They never itched or burned. The total number present at any one time was not large—certainly not more than a dozen.

In addition to the circumscribed petechial and ecchymotic hemorrhages under the skin and mucous membrane of the oral and nasal cavities, general bleeding from the nose and mouth was a prominent symptom. The gums were quite spongy and swollen, and during the day the patient expectorated a considerable amount of blood. She declared that every time she opened her mouth it was full of blood, which she spat out; frequent inspection of her mouth corroborated this testimony. This blood evidently originated from the mouth, pharynx, and nasal cavities. At night hemorrhages took place from the nose alone, sometimes profusely. There was at no time any hemorrhage from the uterus, vagina, intestines, kidneys, bladder, stomach, or lungs. With the sole exception of anemic symptoms, the patient never felt sick. She continued, without cessation, to perform her usual duties about the house, and to furnish nourishment for her child throughout the course of her complaint. Her appetite was always good, and her bowels were markedly constipated.

My dermatological friend, Dr. Van Harlingen, kindly looked at the case, and assisted me in giving so complete a history of it.

The treatment pursued was that for scorbutus:—Change of diet, vegetable acids, iron, and an astringent for the mouth, under which treatment she rapidly recovered. She had at no time swelling of the lower extremities."

Dr. Arthur Van Harlingen, upon invitation by the President, made some remarks with reference to the various forms of purpura. If we exclude those diseases in which purpura occurs only as a symptom, and concede the existence of the affection as an entity, we find it occurring under three forms: P. simplex, when the hemorrhage takes place only under the skin; P. hemorrhagica, a severer form of the disease, when hemorrhage of the mucous membranes is observed and when epistaxis, hematemesis, and intestinal hemorrhage are not uncommon; and P. urticans, a purpura closely connected with urticaria. Nearly allied to these are the forms of purpura found in connection with the hemorrhagic diathesis and with scurvy. Ordinarily these various forms of purpura are not difficult to differentiate. In the case under consideration, the question arises as to whether the patient was suffering with P. hemorrhagica or scorbutic purpura. Although privation existed and some of the symptoms certainly pointed to scurvy, he (Dr. V. H.) inclined to the belief that the case was one of a mild form of P. hemorrhagica. With regard to the pathology of purpura, this is still obscure; different authorities believe it to be caused by some alteration in the quality of the blood, in the walls of the capillaries, in the innervation of the capillaries, or to an increase in the blood-pressure in the capillaries, or finally to two or more of these causes combined. The theory of the "nervous" origin of purpura—that the hemorrhage is due to paresis of the vaso-motor nerves, giving rise to stasis—has of late been brought forward, and the facts urged in its favor seem to give it reasonable support.

Dr. Wm. H. Parish had seen, in the Philadelphia Hospital, a similar case of purpura hemorrhagica. A nursing woman, very destitute, was in that condition upon admission to the Hospital. Her child was five months old. She was soon relieved by the change of food and circumstances. In this case the Doctor did not use ergot, for fear of a bad effect on the secretion of milk from its long continued use, which would have been necessary to accomplish a cure.

Dr. Van Harlingen had found the effect of ergot to be very prompt in purpura hemorrhagica when the latter was not complicated by scurvy.

Dr. Albert H. Smith had seen two cases which yielded promptly to general treatment. He recalled to the members a case reported by him at the February meeting of the Society (see page 349, Vol. X., No. 2), where a similar condition in a child convalescent from typhoid fever had been successfully treated by means of transfusion.

Dr. Albert H. Smith read, for Emeline H. Cleveland, M.D., the history of a successful operation for the relief of a

COMPLICATED CASE OF VESICO-VAGINAL FISTULA.

Mrs. A., a healthy, vigorous, well-developed woman, resident of a western city, was delivered of her sixth child at term, Sept. 23d, 1872.

Her previous pregnancies had all been interrupted, at six, seven, or eight months, in consequence presumably of great frailty of the membranes. These had always ruptured, without pain or other apparent reason, and before labor occurred or was induced, the child was in great peril, if not already dead.

In this pregnancy, Mrs. A. was advised to maintain the recumbent position during all the latter months, and to secure the interest and prompt attentions of two physicians. The labor commenced, as heretofore, in the spontaneous rupture of the membranes.

It was terminated by the use of the forceps, but under what precise circumstances I am unable to ascertain. It suffices that from the moment of delivery, the desire to urinate was never experienced. A fistula was recognized, and in due time an operation was made for its closure. This being but partially successful, another and another were attempted to the number of eight.

The patient came under my observation and care in June, 1876, in utter despair, but yielding to the entreaties of her friends to allow one more effort. On examination, the cervix uteri was found torn on the left side, even to the internal os, and bound at this point somewhat firmly in position. From the extreme upper part of this laceration, there extended obliquely forward and inward, along the base of the cervix uteri, a small fistulous orifice, from the lower extremity of which was observed a cicatricial line running still obliquely downward and toward the right, about one and one-half inches. Near the lower terminus of this line was another small fistula.

With much hesitation, in view of so many failures and the discouragement of the patient, I began the study of the case.

The upper fistula, which alone seemed to offer any difficulty, could be brought momentarily into view, by placing the patient in the knee-elbow position (her abdomen resting upon a firm stool, padded in conical form, so as to press deeply into the pelvis from above), and then passing Sims' speculum along the anterior wall of the vagina. But great difficulty was experienced in keeping it in view. The speculum would slip back of the cervix, in which position the fistula was quite overlapped. Method after method failed in holding the gash as desired. If tenaculum or volsellum was made to seize either of the widely separable lips of the cervix, it or the hand that held it was in the way of the operator, and so of every device.

At this juncture, it occurred to me to transfix either lip with a strong and long thread, so that it might be held in the position wanted without the disadvantages already mentioned. One thread was carried over the perineum behind or below the handle of the speculum. The other was held upward, and to my right, the vulvar tissues being properly guarded.

In this position I succeeded in paring the edges of the fistula, and closing it by three silver sutures. The wires were carefully twisted, the ends of each thread being shotted together outside the vulvar orifice.

The patient was kept at rest, and at the end of ten days the sutures were removed. I attempted to make their removal without the use of ether, but the suffering was such, together with the same difficulties of bringing into view, that we were obliged to place the patient and the parts in the same condition as before.

We had the satisfaction of finding the fistula apparently closed. There remained the lower orifice—small, but in what seemed to be a very thin wall.

After a rest of a few days, Mrs. A. bravely submitted to an operation upon this.

Fearful of enlarging an aperture in so thin a septum, I cut the edges too sparingly, and had the annoyance in due time of finding my work of no account. Again was the operation repeated, and it was not until the third trial that the parts had acquired fullness and vascularity enough or the surgeon boldness enough to insure success.

For several weeks a measure of doubt hung over the case, even after this twelfth operation. The urethra had been so long under trial from the presence of the catheter, if not from disuse, that its functions were far from perfect.

Improvement took place gradually, however, and at the end of three months Mrs. A. wrote from her western home that her health was never better, or her local condition more comfortable. I was so much pleased in the care of this case with the use of a small catheter, that I am glad to mention it, and to express my obligations to whoever invented it. It was in possession of the patient, and had been procured for some former operation. It consisted of a small, moderately curved silver tube, about one and one-half inches in length, terminating at the inner end in a small, oblong, perforated bulb, and the outer end in a smooth, circular flange. It was easily introduced and removed, and was not liable to painful displacements in the necessary attentions to the patient.

I have pleasure also in expressing my obligations to those who so kindly and patiently assisted me, especially to Drs. Anna E. Broomall, Hannah Z. Crossdale, and Mary Allen."

Dr. Wm. H. Parish said the catheter referred to was after the pattern of one recommended and devised by Prof. Skene, of Brooklyn, or rather it was Skene's modification of one devised by Prof. Goodman, of Louisville. The modification consisted in the substitution of a perforated, olive-shaped vesical extremity for the conical, open one of Goodman's catheter. He is now using one of Skene's hard rubber catheters, with a prolongation for the attachment of a tube, in the treatment of an obstinate case of chronic cystitis. The catheter irritates the bladder as little as any instrument possibly could, and is self-retaining even with a tube attached, and the patient in the erect posture. The catheters are in sets of three, with different-sized bulbs, and can be obtained from the manufacturers, Messrs. Otto & Sons, New York City.

There is an article with diagram by Prof. Goodman, descriptive of his catheter, in the November number of the American Journal of Obstetrics for 1874, page 413.

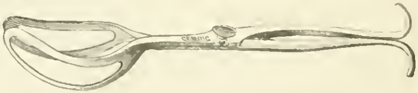
He considers Skene's modification the best self-retaining female catheter in use.

Dr. Richard A. Cleemann read a paper on "A Pelvic Curve in the Shank of the Obstetric Forceps,"[1] to facilitate application above the brim of the pelvis in cases of antero-posterior narrowing.

Dr. Andrew Nebinger, related some

FACTS CONNECTED WITH THE USE OF THE BETHEL FORCEPS IN TWO CASES OF LABOR COMPLICATED WITH CONTRACTED PELVIS, AND ONE CASE OF LABOR COMPLICATED WITH UTERINE INERTIA.

The case of uterine inertia, the doctor said, occurred in a German woman, who had given birth to several children without any unusual difficulty. She had been in all her labors attended, as she was in the one referred to, by a midwife. He was called to deliver the woman after she had been in labor for many hours, and at a time when the labor pains had ceased. Upon examination he discovered the os uteri well dilated, that the waters had been evacuated, and the head high up in the superior strait. Thinking that the labor might be made efficient by the use of ergot, he administered that drug and waited for it to produce its specific effect. It failing to increase the contractions of the uterus sufficiently to advance the child, he determined to deliver with the forceps. He made many efforts to apply them, but was unsuccessful. He could not adjust the blades. It was the first time that he had been foiled in his application of the forceps. The instrument used was Hodge's. Having seen in the possession of his friend, Dr. Joseph Kane, now dead, a pair of the Bethel Forceps, and they being very different, in their pelvic and cephalic curves and the manner in which the handles come off from the blades, from the Hodge forceps, he visited Dr. Kane, borrowed from him his Bethel forceps, and invited him to assist him in the delivery. Shortly after the doctor and he reached the lying-in room, he made an examination and found the head to be in the same position it was when he failed in the application of the Hodge forceps. He proceeded to apply the Bethel forceps. (See cut.) Much to his surprise and greatly to his delight, he adjusted them without any difficulty and delivered the woman.



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[1] See Original Communications in this number.

He was, he said, called from his bed, a decade and more of years ago, by a messenger, sent to him by one of the members now present, who invited him to assist in the delivery of a woman who had a deformed pelvis, and who, upon one occasion, and it may have been upon two, required for her delivery that craniatomy should be performed. The doctor in attendance had applied his Hodge forceps several times, and as often as he had applied them they slipped from the head when positive traction was made. Dr. N. applied the same forceps with the same result. The child was dead. It being evident that the head of the babe would have to be opened, and as neither the doctor in attendance nor himself had craniotomy instruments, it was determined that Dr. Harlow, who had about that time invented his cranioclast, should be invited to visit the woman and bring with him his craniotomy instruments. Dr. N. having been called away to look after a case of labor which he was engaged to attend, was not present when Dr. Harlow arrived. He learned that Dr. Harlow very properly made efforts to deliver with the forceps, but after several failures caused by the slipping of the instrument, he opened the head with his cranioclast, and delivered the woman. A few years after, perhaps three, Dr. N. was called to assist the Doctor who was then in attendance upon the woman referred to, who was again in labor. The accoucheur in attendance had made many vain efforts to deliver her—vain because of the slipping of his forceps, which were Hodge's. Dr. N. had taken with him his Bethel forceps, which he invited the doctor to use. He declined to do so, and requested Dr. N. to apply them. He did so, and delivered the woman of a living child.

There is now present, continued the Doctor, a member who will bear witness to the accuracy of the facts which he would now relate. The member referred to was associated with the accoucheur, who had been engaged to deliver a woman, who, it was known, had a deformed pelvis. The two doctors had been with the lady all night. Dr. N. was sent for by them at early morning to aid them in the delivery. The doctors had applied upon several occasions Hodge's forceps. They had not found any difficulty in adjusting them, but as often as they applied them they had been foiled in their efforts to extract the child by the slipping of the forceps. Dr. N. had with him his Bethel forceps. He suggested that, inasmuch as they were very different in their conformation from those used by the doctors, that they might succeed in the delivery with them. The gentlemen were wearied by anxiety, loss of sleep, and exertion. Dr. N. was invited to apply his Bethel forceps. He applied them and delivered the woman. Dr. Nebinger remarked that the two gentlemen referred to in the case first narrated, as well as the gentleman who had charge of the case, previously spoken of, and who invited him to apply the Bethel forceps, were his peers in all respects as accoucheurs, as dexterous, and it may be even more dexterous in the use of the forceps than himself. Hence the want of success was not dependent upon the absence of ability and skill in those gentlemen, nor was his success the result of any great ability in the application of the forceps; his success was dependent upon the kind of instrument which he used. With the Bethel forceps, the gentlemen would have accomplished all that which he achieved. The Doctor remarked that he could call up other cases in which he had successfully used the Bethel forceps, when delivery had failed to be effected by the use of other forceps, applied by skilful hands. He would not have occupied the attention of the society, had not the President requested him to make some remarks upon the Bethel forceps, an instrument which Dr. N. regarded as very valuable because very useful.

TRANSACTIONS OF THE CINCINNATI OBSTETRICAL SOCIETY.

Reported by J. W. UNDERHILL, M.D., Secretary.

Stated Meeting, August 9, 1877.

DR. J. J. QUINN, *President, in the Chair.*

DR. QUINN read the first portion of a paper on

SPONTANEOUS CEPHALIC VERSION. SHOULDER PRESENTATIONS AND THEIR TREATMENT.

Stated Meeting, Sept. 13, 1877.

Both the President and Vice-President being absent, DR. REAMY was, by vote of the Society, called to the Chair.

Dr. William H. Minnich presented the following paper, entitled

A SKETCH OF THE COMPARATIVE OSTEOLOGY OF THE PELVIS.

"The comparative anatomy of the bony pelvis is a subject full of interest to the practical obstetrician no less than to the naturalist.

Modern anatomists have generally accepted the theory of Geoffroy St. Hilaire, that there is a homology, or similarity of structure, pervading all animals. No animal can be said to have any part which was made expressly for it, so that the apparent variety which meets us at the threshold of investigation is only that modification of certain constant elements demanded by the various conditions of animal existence.

With this theory in mind, we may now regard this interesting portion of the skeleton, although the limits of this paper will permit only the merest outline.

Development and Special Homology.—The bones of the pelvis are developed from elements of the vertebræ, with the sacrum for a centre. The parts of the innominata grow from three main ossific centres. The state of non-fusion which is transient in the young of mammals, is permanent in reptiles.

There is a close analogy between the elements of the pelvic and scapular arches. The ilia correspond to the scapulæ, the ischia to the coracoids, and the pubes, according to Huxley, to the pre-coracoids; according to others, to the clavicles. However, as the clavicle does not enter into the formation of the glenoid cavity, the latter analogy cannot be supported.

We shall now glance at the different classes of vertebrates, and notice some of the distinctive features of pelvic development in each.

Fishes.—Very few of this class possess any semblance of a pelvis. When we do find it, it consists of only one bone or cartilage, or at most two, corresponding to the ischia, and never attached to the spinal column. They are imbedded in the abdominal muscles, and support the ventral fins.

Reptiles.—In the order of ophidians is occasionally found a pelvic bone or two, but in reptiles of quadrupedal development we see a sudden approach to the mammalian type of a perfect pelvic arch. The ilia articulate with one or more vertebræ, and with the ischia and pubes in the cotyloid cavity. There is an anterior symphysis, but no obturator foramen. Anchylosis between the parts of the innominata never occurs, and in crocodiles the pubes remain cartilaginous. In frogs the ilia are very long, cylindrical, nearly parallel with the spinal column, and articulate by ligaments with the transverse processes of a single vertebra, the ninth. This order has a straight coccygeal spine.

Birds.—In birds all the elements are present, and anchylosis is marked to an extreme degree. The sacrum is formed in many birds by the fusion of as many as twenty vertebral segments. The usual number of caudal vertebræ is nine, terminating in birds of flight in the "ploughshare bone."

The ilia are relatively large, very thin, and firmly joined to the sacrum in their whole length. The ischia are united to the ilia, and the sciatic notch becomes a foramen. There is generally a cotyloid foramen. The pubes are long and slender, attached only at the cotyloid extremity, and running parallel with the ischia, forming obturator spaces.

There is no anterior symphysis, except in the ostrich.

Thus we see, generally, in birds a massing of pelvic elements posteriorly, and an anterior deficiency. This is explained by the relatively large size of the ovum and its unyielding envelope.

Marsupials.—The animals in which the partly developed fetus is transferred from the uterus to an external ventral pouch, possess, in addition to the usual pelvic elements, a characteristic pair of marsupial bones, of which we see the rudiments in the pubic spine of man and some other animals. According to Owen and Huxley, these may be viewed as sesamoid bones developed in the tendon of the external oblique, and serving to support the pouch. They occur in both sexes. In the human subject, cornicles have been found developed in Poupart's ligament near its insertion at the spine of the pubes.

The ilia in these animals are long, irregularly prismatic, with overhanging alæ, and projecting behind the sacrum. In the kangaroo the ischia are elongated, broadened and everted. There is a long pubo-ischiadic symphysis, pieced out below by an intersciatic epiphysis.

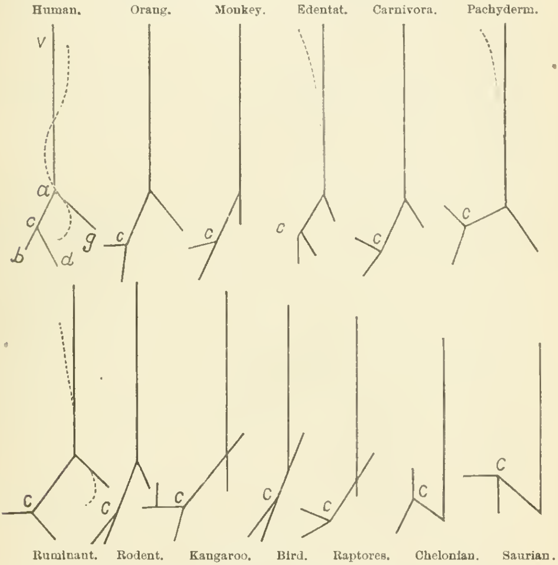
Mammals.—In cetaceans there is an abrupt degeneration of the pelvis into two small bones analogous to the ischia. These are just anterior to the anal opening, not attached to vertebræ, and support the *crura penis.*

In the other orders of mammals below man, the human type exists, with only such modifications as natural conditions demand.

The ilio-vertebral angle is subject to much variation. In some animals, as the elephant, it is as small as 100°, while in carnivora it may reach 160°. The subjoined diagram, from Wood, will show at a glance the varieties of pelvic angles.

The pelvis is narrow, as the centre of gravity is thrown more forward, and support of the body is shared in by the anterior extremities. The pubo-ischiadic symphysis is constant. In certain individuals, as the seal, cow, and guinea pig, a separation at the symphysis, by a relaxation of its ligaments, takes place at the time of bringing forth. This is especially marked in the guinea pig, where, according to Owen, the fetus attains considerable development, even some of the deciduous teeth being shed *in utero*. The fetal head is larger than the transverse diameter of the brim in the ratio of 20 to 11. This relaxation and separation is a gradual one, beginning at three weeks before delivery.

COMPARISON OF PELVIC ANGLES.



v a g. Vertebro-sacral, 117° human.
v a c. " -iliac, 155 human.
a c b. Ilio-pubic, 0° human.
a c d. " -sciatic, 110 human.
a. Monkey. Vertebral, sacral and ilio-aciatic, 0°

b. Orang, Ilio-pubic, 125°
c. Carnivora and Raptores, Ilio-aciatic angle reversed.
d. Chelonian and Saurian, Vertebro-iliac, an acute angle.

In four-handed mammals, there is great obliquity of the pelvis. The antero-posterior diameter at the brim is much greater than the transverse; hence the hips are approximated, and support or progression by means of the posterior extremities alone becomes difficult, if not impossible.

A striking fact has been pointed out, which distinguishes man from all the lower orders.

In man the pelvic brim lies all in one plane; in all the other orders this is bent in two directions at the ilio-pectineal eminence, generally throwing the plane of the pubic arch forward.

In the highest apes this antero-posterior angle is 120°.

In quadrupeds this arrangement is necessary to place the pubic arch forward out of the way of the approximated femurs.

Man is peculiar in having a sub-pubic arch, the ischia not entering into the symphysis.

The sexual variation of pelvic type, so marked in man, is not usually recognizable in the lower animals, although Chauveau says that the pelvis of the mare exceeds that of the horse in all directions, and Huxley makes the same observation in regard to the male and female of chimpanzee and orang.

Since such remarkable ethnic variations of cranial development in the human family have been discovered by the industry of comparative anatomists, it might be interesting to know whether corresponding variations have been noticed in the pelvis. This branch of the subject has, however, received but little attention, and no definite conclusions have been reached."

Dr. C. D. Palmer presented the report of a case of

PELVIC ABSCESS, EXTERNAL OPENING, AND COMMUNICATION WITH INTESTINE.

"About two years ago I attended a lady in an attack of parametritis, confined chiefly to the left broad ligament, following an abortion at third month, which, at first, progressed favorably and seemed to be undergoing resolution without suppuration, but which afterwards, as the result of too early assuming the erect posture, contrary to the most explicit directions, relapsed and passed into suppuration. The pointing of the abscess was external. This, as soon as noticed, and in the absence of any signs of fluctuation at the vaginal roof, led me to open the abscess first with an aspirator needle and subsequently enlarge the opening with the knife.

After thorough evacuation of the pus and cleansing of the cavity of the abscess with injection of carbolized water, in some ten days I observed the passage of liquid and undigested food through the external opening. Evidently a portion of the small intestine had been perforated, and was discharging part of its contents through the artificial canal.

Following several months of treatment, during which the track of the abscess was gently cleansed at shortening intervals, and moderate compression externally applied, to secure adhesion to the pyogenic walls, complete closure resulted.

Menstruation was all of this time going on at regular intervals. A small amount of induration could now be felt by deep palpation in the region of the affected ligament.

In some three months after, pregnancy occurred. Fearful of a reopening of the fistulous track after delivery, from a renewal of the pelvic cellular inflammation, I rigidly enjoined more than the usual maintenance of recumbent posture. She was kept in bed full three weeks, and under the influence of quinia in moderate doses. But, unfortunately, a reopening *did* occur at the old site. Treatment for one month, after the former manner, effected a complete and it is hoped permanent union some four months since."

Dr. Reamy, commenting upon the case, said: "The character of the food discharged showed that the small, not the large, intestine had opened. An inflammatory process, conservative in its nature, had doubtless caused adhesion of the perforated intestine to the inner surface of the walls of the abdomen, preventing thereby escape of the intestinal contents into the abdominal cavity. I believe that the opening in the bowel exists yet, and in all probability an abscess will form again at a future time. I call to mind now four cases of this character in which the abscess pointed externally, and I recollect several instances in which the pointing was into the vagina or rectum. It is a question frequently difficult to decide, whether to puncture through the abdominal wall or vaginal roof. Generally the puncture, when made through the abdominal wall, should be delayed as long as there may be hope of natural conservative protection of the peritoneal cavity from pus. As a general rule, perhaps, it is safer to puncture through the vagina or rectum. Usually the adhesions between the abdominal wall and intestine are not complete, so that, by puncturing externally, we are more likely to let pus into the cavity of the abdomen. This danger is more likely to be obviated by the puncturing through the vaginal or rectal walls."

Dr. Palmer remarked:

"The case had special interest, first, because of the direction of the pointing of the abscess, which although not the most uncommon, still, is comparatively so. Second, because of the secondary communication of the abscess with the upper intestine, really an exceedingly rare occurrence.

It was fortunate so favorable a result followed. I am disposed to think the treatment had much to do with this, and believe that, when the closure first took place, the internal opening of the abscess connecting with the intestine had closed also. For several weeks before there was complete union at the external opening, undigested food had ceased to pass at that point, indicating a gradual closing of the internal orifice. And it seems probable, had the internal communication remained patent, undigested food would have passed still, its presence as a foreign body excited inflammation, and prevented the external closure.

Fears entertained as to the reopening of the old track after delivery were well realized. Experience abundantly teaches that pelvic abscesses most frequently start up after abortion or labor at term. A previous attack of pelvic cellulitis with suppuration doubtless predisposes at this time to another. Cicatricial tissue is less firm and more easily broken down than the original tissue. Thus but a moderate amount of inflammation would be required to reopen the site of the old abscess.

My own personal experience in private and hospital practice tells me that by far the larger number of cases of pelvic cellulitis does not pass on to suppuration. In coming to this conclusion, I have endeavored to exclude all cases of pelvic peritonitis with which cellulitis may be confounded. Moreover, some estimate must be made for cases in which limited suppuration occurring, the pus discharges itself into the rectum unnoticed by patient or practitioner.

With a view to, if possible, give permanency to the present favorable condition of this patient, I have directed that she continue the nursing of the infant for a full year; that ovulation and menstruation may be held in abeyance."

Stated Meeting, October 11th, 1877.

Dr. McMechan reported

A CASE OF DYSTOCIA.

"On September the 4th, 1877, I was requested by Dr. Sidney Spence, of St. Bernard, to see a case of labor with him. The patient was a German woman, about forty years of age, and the mother of six children. Several of her labors had been difficult, and the forceps had been used in delivering her. One child had been born dead. The woman was taken with labor pains at 8 P.M. on the 3d inst., and at 1 P.M. on the 4th inst. I saw her for the first time. Her pulse was very rapid, and she seemed to be quite exhausted from severe labor pains. Dr. Spence had diagnosed the position and presentation before I examined the woman. The presentation was that of the face, and the fronto-mental diameter occupied the transverse diameter of the pelvis, the chin looking to the right side. The face had occupied this position almost from the beginning of labor, and the long-continued and strong pains had failed to rotate the chin forward. On consultation it was deemed best to try and apply the forceps, and attempt to rotate the chin forward. This was attempted, but on introducing the forceps, it was found impossible to lock them. Upon examining the pelvis more carefully, we found that the promontory of the sacrum projected forward to such a degree that the antero-posterior diameter of the pelvis measured not more than three inches. Upon discovering this, we concluded to turn. The patient was etherized, and when fully under the influence of the anesthetic, an attempt was made to push the face and head above the pelvic brim, and to flex the head, or, in other words, to change the face presentation into a vertex presentation. As I had succeeded in this manœuvre on a previous occasion, I used considerable force in this case, but without success. Turning was then had recourse to, and podalic version was performed without very great difficulty. The child was extracted, all except the head, but to effect its extraction required fully five minutes. Immediately after the delivery considerable hemorrhage took place, but by making firm compression over the uterus externally, and by compressing the lower and under portion of the uterus by means of the hand introduced into the vagina, the hemorrhage was partially controlled. To further assist in stopping hemorrhage, a piece of ice was also introduced into the uterus. It was now noticed that a polypus was protruding from the uterus, and it was of such length that it also protruded from the vagina. As the woman had lost so much blood and was almost exhausted, we returned the polypus into the vagina, which was then tamponed. After an hour, she rallied, and was feeling moderately comfortable; but the next day she began to vomit, and the vomiting continuing, she died about 3 P.M."

At the conclusion of the report of the case, DR. PALMER inquired: "Was the child dead when forceps were applied?"

DR. MCMECHAN.—"It was."

Dr. Palmer, continuing, remarked: "I have no doubt respecting the correctness of the diagnosis of a contracted conjugate. The fact that this patient had always before had difficult labors; that in one instance the child was dead after a long and painful labor; that here there was a persistent face presentation, with no descent or rotation, and, finally, the nationality of the patient (German)—all these made the diagnosis of pelvic deformity exceeding probable.

Under the circumstances, version was a proper procedure, only to be replaced by, or inferior to, perforation. But I cannot sanction the use of the tampon under circumstances of post-partum hemorrhage at term, or even after premature delivery.

As to the management of the polypus, the better plan, in my judgment, would have been to give ergot and remove the tumor immediately with wire ecraseur or ligature."

Dr. Trush.—"I wish to ask Dr. McMechan to what he attributes the death of his patient. To loss of blood mainly, or to possible injuries?"

Dr. McMechan replied: "I cannot answer the question, as I did not see the woman subsequently to her delivery. I have been informed by her attending physicians that the abdomen was very tympanitic at time of her death."

Dr. Trush.—"I regard the application of forceps in such case as that of Dr. McMechan's as of very doubtful propriety, even when the child is living; and when, as in the doctor's case, the child is dead, I hold that the forceps ought not to be employed. Under such circumstances, craniotomy and extraction of child by means of cranioclast, etc., is, in my opinion, the proper operative procedure. If, in his case, the child had still been living, then turning would have been the operation indicated.

I agree with Dr. Palmer in regard to the employment of the tampon after delivery of the child. I hold that the plugging of the vagina after the expulsion of the fetus, at any time subsequent to the fifth month of utero-gestation, is a dangerous procedure, and one which ought to be universally condemned."

Dr. Reamy.—"I agree in the main to the criticisms which have been made, and hold that, if the child was dead, the interests of the mother were alone to be consulted. Hence, under the circumstances described by Dr. McMechan, attempts to rotate the chin forward, and convert the face into a vertex presentation, were injudicious; nor do I regard turning under these conditions as the best course to be followed. With a conjugata vera of three inches, I have succeeded in extracting small heads by aid of forceps, but never when the face presented. Had the child been alive in this instance, then I would regard the course pursued as proper; but as it was dead, the management cannot be commended.

I also object to the use of the tampon in cases like the one under consideration. And as to the polypus, that should by all means have been removed, even using a silk thread for the purpose, if nothing better was at hand.

Concerning the cause of death, I believe septicemia to have been the prime factor, conjoined perhaps with peritonitis. But I do not regard the loss of blood as having any material influence in causing the fatal termination."

Dr. McMechan.—"It is proper that I should explain more particularly why the tampon was used. It was employed principally to make affairs look more presentable to the friends of the patient. Already she was believed to be dying, and being a Roman Catholic, the priest had been summoned to administer the last rites of the church. It was at this time the tampon was applied, and chiefly for the purpose already mentioned.

The reason craniotomy was not resorted to was because the necessary instruments were not at hand, and could not readily be obtained. In their absence, forceps were applied, they being convenient, and besides, it was not known at that time that the pelvis was contracted. The diagnosis of contracted conjugate was made subsequently."

Dr. M. B. Wright.—"I wish to call attention to a point in connection with my management of face presentations. It is this: I always bring the chin forward, if possible, under the arch, and I succeed best when I can accomplish this manœuvre. Failing in accomplishing this, I resort to the forceps. I have asked myself the question, 'Which is attended with greater injury to the patient—the use of forceps prior to rotation of chin, or turning upon the feet and extraction by the lower extremities?' And I have come to the conclusion that turning is the more serious alternative. I would therefore not turn a face presentation at all, unless compelled to do so by special conditions. Perforation in face presentations is not an easy operation."

Dr. Reamy.—"I desire to ask Dr. Wright if he does not apply his remarks to cases of normal, rather than those of contracted pelvis?"

Dr. M. B. Wright replied: "It being but rarely possible to ascertain the exact size of the pelvic canal, I would always first have recourse to the forceps."

Dr. Cleveland.—"Dr. Wright's words in regard to the difficulty of determining pelvic dimensions recalls to mind the history of a case I saw in consultation not very long ago. The head was wedged in at the superior strait in such a manner that the length of the antero-posterior at this point could not be made out. I therefore employed forceps, but to no avail, I then turned upon the feet, and failing to extract the head, decapitation was finally resorted to, and the head subsequently crushed and extracted. It was then found that the conjugata vera measured not more than 2¾ inches."

Dr. M. B. Wright.—"In the case under discussion, the fact must not be lost sight of that the woman had previously given birth to children spontaneously, although with great difficulty. This fact alone must, I think, be sufficient to justify Dr. McMechan in the use of forceps."

Dr. McMechan.—"I do not regard the fact that the woman had given birth spontaneously to children in previous labors as sufficient proof that such would be the result in subsequent labors."

Dr. Reamy.—"The remarks which I have already made in this discussion to-night are based upon two facts, viz.: 1st, that the child was dead at the time an attempt was made to use the forceps, and 2d, that the pelvis was contracted. I hold that in every instance a careful exploration of the pelvic space should be made, and if it is found that the antero-posterior diameter at the upper strait is only 3 inches, or certainly if not more than 2¾ inches, the fetal cranial development being complete, then every moment wasted with forceps is prejudicial to the case. Craniotomy or the Cesarean section is, under these circumstances, the only practicable resource left to the accoucheur," and certainly, if the child be dead, between these the choice is easy.

Dr. Trush.—"I wish to ask Dr. M. B. Wright if he does not experience very great difficulty in extracting a head from the superior strait, presenting with the face, and this in transverse position? And I will remark farther that modern authorities, so far as I know, do not recommend forceps under such conditions, especially as rotation of the chin forward could not be hoped for so long as this part remains at the pelvic brim."

Dr. M. B. Wright.—" will say, in reply to Dr. Trush, that I do not claim a forceps operation as easy under the given conditions. I simply wished to say that the use of forceps was preferable to turning."

Dr. Palmer.—"I may add to the statements which I have already made in this discussion, that I believe the course recommended by Dr. Wright, viz.: use of hand and forceps to facilitate rotation in face presentations, to be the best one in cases of normal or but slightly contracted pelves. But when the pelvis is well contracted, the long-continued use of forceps is positively harmful to both mother and child. When moderate traction has failed to cause any descent of the head, and has demonstrated the strong relative disproportion existing, a persistent application of the forceps only jeopardizes the life of the mother. And when to this is added exhaustion, then such a procedure becomes more reprehensible. Perforation should be at once performed, the mother's tissue saved, and further exhaustion prevented."

Dr. Reamy.—"I will ask Dr. Palmer whether he would always, under these circumstances, recommend the perforation of a living child?"

Dr. Palmer.—"There are circumstances warranting the perforation of a living child. Certainly the life of the mother should always receive first and most consideration."

Stated Meeting, Nov. 8, 1877.

Dr. J. J. Quinn, *President, in the Chair.*

Dr. W. H. Minnich was elected an active member of the Society. Dr. Edward W. Jenks, of Detroit, Mich., was elected an honorary member.

Dr. Quinn completed the reading of his paper on

"SPONTANEOUS CEPHALIC VERSION"—SHOULDER PRESENTATIONS AND THEIR TREATMENT,

the first portion of which had been read in August.

Dr. E. B. Stevens, of Lebanon, O., was invited to read an article based upon a case of "Amaurosis caused probably by Albuminuria during Pregnancy."[1]

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[1] See Original Comm. in this number.

QUARTERLY REPORT ON OBSTETRICS AND GYNECOLOGY.

PREPARED BY GEORGE J. ENGELMANN, M.D., ST. LOUIS; J. FEW-SMITH, JR., M.D., NEWARK; AND FRANK P. FOSTER, M.D., NEW YORK.

OBSTETRICS.

1. CEPHALOTRIBE AND CRANIOCLAST. (*Gyn. Sec. German Congress of Phys.*, Sept., 1877.)

CREDE (Leipzig) first quoted from Max Wiener and Fritsch to show the various and often contradictory opinions held and taught at different universities about these two instruments, each of which should have its own separate and definite use. Though he would not undervalue the cranioclast, yet he must say that, in his practice, the cephalotribe had been a much surer and easier help to him. Often, after vain attempts with the former, he has easily overcome all obstacles with the latter. From his experience he cannot agree with a single one of the strong objections made by Wiener and Fritsch to the cephalotribe. He upholds its use as strongly as he did thirty years ago. He also believes that the theoretical objections of these authors have long been silenced by general practice. In Prague, cephalotripsy; in Vienna, cranioclasis; and in Berlin, a combination of both methods is used.

C. uses the cephalotribe of Busch. It is long, slender, fine, and yet strong, of very hard steel and capable of crushing the strongest head. The cranial curve is slight, the pelvic quite marked. No lighter or shorter cephalotribes have, in the speaker's hands, accomplished the same service as this. In cranioclasis he at first used Simpson's instrument, but afterwards Braun's, with an attachment for compression and for seizure.

The operation of cephalotripsy in vertex presentations is as follows:—

"I first make, with a scissor-shaped instrument, a tolerably large perforation in that part of the head most easily reached. In breech presentations this is more difficult and often unnecessary. I then make a short pause, during which the uterine contractions eject some of the fetal blood and brain, and compress the head to some extent. The cephalotribe is then fitted as high as possible, and accurately in the *middle of the head*, this being more important than the surface or side, to which the blades are applied. The instrument is then little by little screwed shut, the brain being forced out, and all the bones bent and crushed together. When the instrument is closed, I wait again in the hope that what uterine contractions still exist may force the head deeper into the pelvis, turning the instrument with it, so that sometimes it lies completely on its side. If the pains have ceased or there is need of haste, I attempt lightly to turn the head toward the side to which I feel it incline, avoiding all violence, rather simply guiding the head down, or at most, toward the end of the operation, drawing it out of the pelvic outlet and over the perineum. If splinters of bone project, they are usually forced back between the blades of the instrument, or they may be pushed into the perforation by the finger or removed by the bone forceps. The whole operation, with the pauses, lasts from ten to fifteen minutes. There is no injury to the mother's parts. Very rarely have I had to remove and reapply the instrument. There is no slipping off of the instrument because no violence is used. For thirty years I have operated in this way and always successfully. I can declare with confidence that the evil sequences and deaths which sometimes followed were not caused by the cephalotripsy, but by the long duration of the labor, and especially by preceding attempts at delivery, particularly violent use of the forceps."

After speaking further of the two instruments, C. concludes :—

"The cephalotribe is a compression or contraction instrument, easy to apply, free from danger, and reliable even in difficult cases. When well made and applied, it can also be used as an instrument of extraction, but must rather carefully *guide* the head through the pelvis than forcibly extract it.

The use of the cranioclast is more limited. In difficult cases, it does not serve to compress the head, but may seize it firmly, draw it well out, and thus serve as an extraction instrument. Both instruments are useful. They complete one another. In the most difficult cases, the former may be applied to crush the head, the latter to elongate and extract it."

In the discussion which followed, SPIEGELBERG spoke strongly in favor of cranioclasis, and mentioned an instrument adopted by Winckel, before the time of Simpson's cranioclast.

WINCKEL replied that this dated from 1859, at which time he was called with his father to a severe labor in a malacosteon pelvis. The cephalotribe having slipped several times, the bone forceps of

Mesnard were applied, and the head successfully extracted. He then had stronger instruments constructed, and for two years now has been using only the cranioclast. He thinks the following questions are to be answered.

1. Can children be extracted through extremely narrow pelves with the cranioclast?
2. Is the basis cranii thereby compressed?
3. How to avoid the tearing out of the instrument?

The first two he answers decidedly, yes. In experiments on recently born dead children, he has in from forty-five seconds to three minutes drawn the elongated heads through pelves of 5 to 6.5 cm. conjugata vera. He has not yet spoken decidedly for either instrument, but his fifteen cases of cranioclasis are decidedly in favor of this operation. J. F.

2. Torsion of the Umbilical Cord. (*Ibid.*)

A. Martin (Berlin) had examined several peculiar cases of the above which could not be considered to have arisen during the life of the fetus. In view of the fact that one torsion must cause the death of the fetus, in cases where there are several, the second and others must be post-mortem. Since, however, we find nowhere any symptoms of venous stagnation in torsions of the cord, such as are always present in other similar disturbances of the circulation, so the speaker is inclined to consider them all as post-mortem, especially as such torsions are easily experimentally produced. He was confirmed in this opinion by recent observation of a case in which the cord showed two torsions, which were clearly wound in opposite directions, while the portion of the cord between them showed only slightly marked windings. J. F.

3. The Amniotic Fluid. (*Ibid.*)

Fehling (Stuttgart) from careful experiments found the amount of amniotic fluid to be much less than is usually supposed—at the end of the tenth month 630 gms. (20 ℥), and for the ninth month, 470 gms. (16 ℥). Comparison of the amount of fluid with the development of the fetus gave no ratio, though this might have been expected from other statistics, since, for instance, the urinary secretion of the fetus is in direct proportion to its development.

As to its constituents, the solids were 11 to 13 parts pro mille. Urea was always found in amount from 0.03 per cent to 0.04 per cent. This was not found to increase with the weight of the fetus. At the same time urea could be found in the mother's blood, but not enough to account for that in the fluid. The amount of foreign matter (salicylate of soda, etc.) is so slight that no conclusions can be drawn as to the frequency of urination of the fetus, especially since the speaker's experiments have shown that such substances can easily pass through the veins of the cord into the surrounding fluid. It is noticeable how many convolutions of the cord (20–30) and torsions occur in cases of increased amniotic fluid. The speaker considers the fluid to be of a serous character, and the urea only accidental. J. F.

4. The Condition of the Uterus and Cervix during Pregnancy and Labor. (*Ibid.*)

Bandl (Vienna) first spoke of the conflicting opinions of anatomists and obstetricians on this subject; the old theory being that the cavity of the cervix *gradually* coalesces with that of the uterus, while at birth its walls become thicker and shorter; the new theory, on the contrary, being that the intact cervix opens at the internal os first at the time of labor, and its walls become thin and elongated.

B. holds the opinion, partially contrary to both of these, that in normal labor there is a shortening of the musculature of the uterus, the cervix, and the vagina, and that all elongation of these muscular tissues is pathological. "Space for the passage of the head is given, not by elongation of the muscular fibres, but by softening, extension, and separation, and this is normally followed by shortening and thickening."

He exhibited specimens to show that the cervix is not a simple canal, but funnel-shaped, and that a large portion of it—in primiparæ the larger portion—flares out into the cavity of the uterus. At the sixth month, in a primipara, the straight portion of the funnel has a length of 2.5 cm., while the flaring portion measures 3 cm. *The same cervical membrane covers both these portions.* It was pronounced cervical membrane by Drs. Chiari and Breus, and Dr. Küstner of Halle. The fetal membrane is closely adherent to the uterus only above the edge of the flaring portion of the funnel, and its lower margin of insertion forms a circle about 6 cm. in diameter. "The condition of the uterus at the sixth month shows that these two portions which I designate as the ring of Müller or ostium internum spurium (at the end of the straight portion of the cervix), and the ostium internum of Braun, or ostium internum verum (at the edge of the flaring portion), assume their destined place from the very beginning of pregnancy. In pluriparæ the departures from this rule are explained by the pathological changes in the tissues of the cervix. Towards the end of pregnancy, the lower part of the uterus, the flaring portion of the cervix, softens, and the bag of waters projects below the plane of the pelvic inlet.

The ostium internum verum can now be felt through the cervix. The straight portion of the funnel now begins to soften, becomes stretched and thinner, and the canal less distinct. I consider the ideal proceeding to be, that, when pains begin, the head should be separated from the vagina by only a very thin tissue. During this time there has been a softening and stretching of the cervical muscles. During the first pains there is a *shortening* or contraction of the muscular fibres inserted in the cervix, the ostium externum is opened, and the vaginal portion of the cervix disappears in the wall of the uterus. The whole muscular sack of the uterus now acts together with the abdominal muscles. etc., in the final act of expulsion."

The speaker then mentions the variations from this procedure caused by pathological changes in the tissue. He admits that in many such cases, as well as in pluriparæ with apparently normal organs, the distinction of the os. int. spurium and verum is not so clear. The length of the two portions of the funnel-shaped cervix may vary greatly, the os internum verum being sometimes scarcely to be found. In primiparæ, however, he claims that there is no doubt as to the lower margin of insertion of the fetal membranes, or the upper edge of the flaring portion of the cervix. It corresponds with the attachment of the peritoneum externally, and the position of large vessels in the walls of the uterus, and forms a distinct sharp line about the centre of the organ. The variations in pluriparæ, whose first labor has been perfectly normal, he also claims are very slight. Cases of placenta previa show a complete absence of the flaring portion of the funnel with its covering of cervical membrane, as also those cases in which the placenta is found adherent even as low as the external os.

In the discussion which followed, most of the opinions were contrary to the speaker's, the others holding that he had not fairly demonstrated that the flaring portion of the funnel really was part of the cervix. J. F.

5. Anomalies in Uterine Pains. (*Ibid.*)

Frankenhaeuser (Jena) showed that at every pain there is a rapid rise of temperature of from $\frac{2}{100}$ to $\frac{10}{100}$ C. Cases where this does not occur, or where there is a full temperature, he consideres anomalous, and the pains only cramps. The rise of temperature is explained by the increased flow of blood to the uterus. He does not express himself decidedly as to the origin of labor-pains, but believes they arise from decrease of oxygen and increase of carbonic acid in the blood. A peculiar fact is that, as the temperature rises in the uterus it sinks in the axilla. He cannot decide whether the flow of bloo from internal organs to the uterus, or the contractions of the uterus itself are primary. J. F.

6. EXTRA-UTERINE PREGNANCY. (*Ibid.*)

COHNSTEIN (Heidelberg) has studied the changes in the uterus and its internal surface during extra-uterine pregnancy.

The most frequent cases are those in which the uterus is increased in size and the decidua still found within it. Next come the cases in which the uterus is enlarged, but the decidua absent; then those in which the uterus and its membranes are unchanged; while rarest of all are the cases in which the uterus is unchanged, but the decidua somewhat developed.

The expelled decidua is the surest sign of extra-uterine pregnancy. When it remains in utero, he recommends the use of the curette to detach portions of it for examination.

As treatment he recommends early injection of morphine into the sack to kill the fetus. Later on he recommends elytrotomy rather than laparotomy, as giving better results for the mother, although of course the child is sacrificed. J. F.

7. DYSTOCIA FROM THE EDGE OF THE PERINEUM SLIPPING INTO THE CHILD'S MOUTH. (*Annales de Gynécologie*, Dec. 1877.)

DR. E. ROIG Y BOFILL, of Barcelona, describes a case of labor in which the patient, a primipara, 16 years old, sat, as is still the custom in Spain, in a perforated chair. The head presented in the left occipito-anterior position. After rupturing the membranes, the pains expelled the occiput promptly, but the doctor was surprised to find that the expulsion of the head was not completed, although the pains were increased in intensity. Placing his finger upon the perineal frenulum, he found it hooked into the child's mouth, which was wide open. It occurred to him that he might disengage the head by bringing the sub-occipito-mental diameter across the canal by depressing the occiput, but fearing that this would make matters worse by causing the shoulders to enter the inferior strait transversely, he forcibly depressed the perineum and hooked the child's chin past it. The child's cheeks showed two broad longitudinal imprints, produced by the pressure of the perineum, contrasting markedly by their pallor with the livid hue of the injected and swollen face. The next day the fourchette was found intact.

F. P. F.

GYNECOLOGY.

8. THE MUCOUS MEMBRANE OF THE UTERUS DURING MENSTRUATION, PREGNANCY, AND CHILDBED. By GERHARD LEOPOLD, Leipzig. (*Arch f. Gynäkologie*, XI., 1., XI., 3., XII., 2.)

This careful research is based for the most part upon personal observation and the study of well authenticated material from the post-mortem room of the Pathological Institute and lying-in wards of the Leipzig Hospital, though to some extent the author relies upon cases reported by others. The work was begun by Leopold in 1873, induced by his researches upon the lymphatic channels in the non-impregnated uterus, and is published in three parts: I. The uterine mucosa during menstruation; II. During pregnancy; III. During childbed. Each part is illustrated by superior plates, colored lithographs taken from micro-photographs.

I. *The changes of the mucous membrane of the uterus during menstruation.*—Nineteen cases have served the author for the study of this period; they range from the first day of the menstrual flow to about the second day before the coming period; from the tenth to the eighteenth day no cases are recorded.

Some of the cases cited from other authors are rather unsatisfactory; thus, Bischoff, fifth and sixth day after the appearance of the flow; Williams, eighth day as well as others, and even his own case, eighth to ninth day with nephritis and ascites. In all of them death was sudden; cases of death from chronic or even lingering disease he does not accept, and not unjustly reproaches other authors with not being sufficiently careful upon this point, as well as the precise date of the menstrual flow. Six of these nineteen cases were observed by Leopold himself.

The general features are those already described by Engelmann (The Mucous Membrane of the Uterus, AM. JOUR. OF OBST., May, 1875); the mucous membrane hypertrophies as the time of the menstrual flow approaches; from a thickness of 2–3 mm. in the intermenstrual period, it attains that of 6–7 mm. at the time of the appearance of the flow, gradually decreasing during its continuance, until at the end of the period we find the mucosa void of its superficial layer, but within a day or two again appearing in its normal intermenstrual condition with a thickness of 2–3 mm.

Not only the observations of Leopold himself, but also those cited from Underhill and Bischoff decidedly disprove the statement of Williams (*British Obstetr. Journal*, 1875, 23, 24), that the entire mucous membrane is shed during the menstrual period.

The glands of the menstrual membrane are no longer narrow and straight as in the membrane at rest; they have become enlarged and tortuous in their course, with marked sinuosities, especially in the central layers; the interglandular tissue consists of the well-known short fusiform cells with large nuclei, which are found in a condition of active reproduction in the lower layers in contact with the muscular tissue.

Characteristic are the young cells which pervade the entire tissue, as well as the blood-corpuscles which are found in the uppermost layers closely surrounding the engorged vessels and rarely extending into the membrane as far as the middle layers.

In marked contrast to the frequency of the enlarged capillaries and arteries in the uppermost layers of the mucosa is the scarcity of veins which appear but here and there, running in a direct course toward the muscularis.

Leopold attacks the statement of Kundrat and Engelmann that the menstrual hemorrhage is due to the fatty degeneration of the uppermost layers of the mucosa, i. e., that the degenerate tissue can no longer resist the pressure of the blood within the engorged capillaries, and that as a consequence we have a rupture of these greatly distended vessels and the discharge of the blood through the uterine cavity. He denies the existence of any retrogade metamorphosis, and explains the menstrual flow in the following way: For several days an extravasation of red and white blood-corpuscles takes place from the enlarged and superficial capillaries into the surrounding tissues, especially toward the surface of the mucosa; thus the uppermost layer of cells is undermined and separated from the underlying layers. A copious supply of blood reaches the superficial capillaries through the numerous arteries, although it arrives but slowly on account of the tortuous course of the vessels; its progress is checked by the enormous dilatation of the capillaries and the scarcity of the returning veins, hence the rupture of the distended capillaries and the escape of the blood through the uterine cavity into the vagina.

Speedily following the cessation of the menstrual flow, the regeneration of the eroded mucosa takes place, which is probably accomplished in the course of a day or two, as it is only the superficial layer which is to be formed anew.

Regeneration takes place by absorption of the remaining extravasated blood-corpuscles, reproduction of the interglandular tissue, and covering of the new former surface by an upward growth of the cylindrical epithelium lining the glands. The same process takes place in membranous dysmenorrhea, in which all but the deepest layers are cast off. But not even in this is the *entire* mucosa expelled, as Williams would have it in normal menstruation.

From the eighteenth day on, the mucosa again begins to hypertrophy, the vessels diminish in size, but the glands lengthen and become more sinuous, the entire tissue more soft and lax. Thus this membrane is in a condition of constant change, but it still remains questionable whether a corresponding regular and periodic change takes place in the ovaries.

The author does not enter upon the question as to the causes of menstruation, and is unwilling to commit himself to any theory of conception, although he leans considerably toward the idea that the ovum impregnated is not that of the last menstrual flow, but of the first period missed. He is rather inclined to consider that the follicle ruptures, and the ovum escapes shortly before the beginning of the flow, while Engelmann finds the rupture generally taking place during the first days of the flow, and considers the ovum impregnated as belonging to the last menstrual period.

II. *The mucous membrane of the uterus during pregnancy.*—The author is to be envied the superb material which he has at command for the study of this condition—gravid uteri, covering almost every month of pregnacy, and some periods even exemplified by a number of specimens. He has devoted especial attention to: 1. The decidua vera, and the changes which take place in the glands in normal and extra-uterine pregnancy; 2. The demarkation between mucosa and muscularis; 3. The structure and changes of the reflexa; 4. The structure and changes of the serotina; 5. The development and growth of the placenta; 6. The spontaneous thrombosis of the veins in the muscularis and serotina at term; 7. The cervix uteri during pregnancy, and the position of the internal os.

Conception having taken place, the mucosa begins to hypertrophy, attaining a thickness of 1.0 cm. and over up to the end of the fifth month, when the growing ovum has everywhere adapted itself to the uterine walls; from this time on, as the uterus expands, the thickness of the decidua diminishes until term, when it is not over 1–2 cm. (I find that the mucosa ceases to increase in thickness long before the end of the fifth month.—Rep.) The reflexa and serotina decrease from the very first, from 3.0 and 7.0 to 8.0 mm. in the early weeks of pregnancy, to ½ and 2.0 mm. at term; the reflexa is thinned out, as it is stretched by the distending ovum; the serotina is in part lost in the growing placenta, in part it is compressed by the weight of the superimposed mass.

The appearance of the uterine glands varies greatly in vera, serotina, and reflexa, owing to different changes which these membranes undergo, yet they can be traced by their fundi in the uterus at term, and in the puerperal uterus. In the vera they are almost to the sixth month long and tortuous, enlarged in the deeper layers, when their epithelium is well preserved, while it is very much changed nearer the opening of the glands. After the sixth month, the distention of the uterine cavity is such and the decidua has been so stretched, that these long tubes appear as a series of meshes in which only the fundi nearest the muscularis still preserve their epithelium.

In reflexa and serotina the glands have from the very first been less elongated, and distended more in their transverse diameters; in the reflexa they are mere short fissures, which disappear by agglutination in the fifth month; in the serotina they form a spongy tissue, a perfect meshwork which remains up to the commencement of labor.

After the fifth month, the placenta rapidly develops, and the characteristic large decidua cells with their numerous nuclei (giant-cells) begin to appear in the serotina. They not only permeate the serotina, but invade in large numbers the inter-muscular connective tissue of the innermost layers of the muscularis, especially in the vicinity of large blood-vessles. In the following months this condition becomes still more evident, until the eighth month, when most important and interesting changes are produced in the deepest vessels of the muscular walls and in these giant-cells.

Toward the end of pregnancy, as Friendländer has first described, the giant-cells migrate, entering the blood-vessels and occluding them; thrombi are formed, and the circulation is obstructed in large portions of the uterine tissue beneath the placental site. It is hence probable that the placenta is then normally in a state of constant congestion, and Leopold deems it not improbable that this venous hyperemia of the placenta may be of great importance in explaining the causation of labor-pains, especially as Brown-Séquard has stated that the irritability of the uterus steadily increases as pregnancy advances, so that, toward the end, the presence of carbonic acid in the maternal circulation may suffice to incite uterine contraction.

The first indications of a placental development are found in the second month, when the villi of the chorion upon the placental site begin to grow rapidly, while on the other parts of the ovum they become lost; here and there the extremities of the ramifying villi are already imbedded in the somewhat roughened surface of the serotina which sends its projections upward among the villi of the chorion. The superficial capillaries of the serotina enlarge and form large sinuses, which the author thinks are to form the receptacles of the advancing villi. In the fourth month, we already find shallow cup-shaped depressions in the serotina, into which the fetal cotyledons adapt themselves, and upon their border, growing serotinal tissue, which enter as septa between the maternal extremity of the cotyledons, but do not advance far toward the chorion.

The villi of the chorion nowhere enter the uterine glands, but the investigations of Leopold give strength to the theory already broached, that the villi penetrate into the enlarged serotinal vessels, breaking through the endothelium of those vessels. The arteries of the serotina empty into the placental sinuses, from which the veins spring directly, the connection being nowhere made by capillary vessels.

The line of separation is found to be the same, whether occurring during labor or brought about artificially in the post-mortem specimen ; it is in the loose meshwork, the lower layers, and not in the more compact upper layers of the serotina; hence but little of its tissue remains upon the placental site, especially toward the centre ; only a delicate layer of glandular fundi, with some little epithelium, can be found.

The placental circulation Leopold describes as follows : From the narrow arteries of the serotina the blood suddenly rushes into the large, intervillous spaces and washes the fetal villi to the very chorion itself; after having given its oxygen to the fetus, it is gathered in the circular sinus and returns to the large veins of the placental site. In these large spaces the circulation cannot be very regular; obstructions will occasionally be met with, may become permanent, and may lead to the formation of thrombi, so often found in these parts.

III. *The mucosa during childbed, and its regeneration in health and disease.*—Immediately after delivery, the inner surface of the womb is raw, and has the appearance of a large wound, as it actually is; it is formed by the separation of the upper two-thirds of the entire mucosa, the deeper layers alone remaining, so that we find this raw surface consisting of innumerable torn glandular spaces void of epithelium, glandular septa, lymph-spaces, and blood-vessels. The deepest portions of the glandular spaces only, the fundi, retain the epithelial lining, and from this, the regeneration of the uterine gland commences. All of these spaces and vessels open into the cavity of the womb, like a system of so many communicating tubes, which can evidently receive as rapidly as they can discharge, the glandular spaces serving, as it were, as reservoirs for stagnant and infectious matter, open gateways for resorption by way of the intercellular spaces, lymph and blood vessels.

Seven days after delivery, we find the inner surface of the entire womb covered with a brownish-red hyperemic layer, varying in structure in different parts of the cavity; in the cervical canal, from the external to the internal os, we already find small folds, plicæ palmatæ, forming, which consist of short spindle-shaped cells and numerous blood-vessels resting on a vascular muscular layer, with gaping intermuscular spaces, and here and there parenchymatous extravasation.

In the uterine cavity proper, with the exception of the placental site, we find the surface becoming smoother, and the regeneration of the glands progressing; their epithelium extends to the surface, but does not yet cover it.

At the placental site, we find numerous thrombi in different stages of development, some so far organized as to indicate that their formation dates back to the last stages of pregnancy. In other words, we find that at this period the mucous membrane of the neck is completely restored, at the placental site less so, and in the corpus least so. The importance of this fact, in reference to late infection and resorption, is apparent.

Nine days after delivery, we find the plicæ palmatæ of the cervix 2 to 3 mm. high, and everywhere covered with dense cylindrical epithelium. The mucous membrane of the body of the womb is 1 to 2 mm. thick, with a punctuated cribriform but smooth surface. At the placental site, we find glandular spaces forming between the thrombi. The regeneration of the mucous membrane here takes place by proliferation of the remaining cells of the serotina, which extend into the funnel-shaped projections which the mucous membrane sends into the superficial muscular layers. These funnel-shaped projections Leopold regards as lymphatic tracts which pass from the mucous membrane through the muscular layer to the serosa; they form the gateways through which pus-corpuscles and infectious matter enter the system.

Fourteen days after delivery, the cervical mucous membrane forms regular folds, which, 4 cm. above the external os, pass abruptly into the mucous membrane of the corpus uteri; this, however, is not yet completely restored, the surface being still covered with degenerated cells and pus-corpuscles. At the placental site, the thrombi have become more or less completely organized, and between them the young mucosa is growing rapidly.

The lining membrane of the womb, at this period, forms a large granulating surface, exquisitely tender, and so delicate as to be readily injured, and it is therefore just as capable of resorption as seven days post partum.

Three weeks post partum, we find the cervical canal closed, the os internum contracted; vertical sections at the placental site show pale-brown spiral thrombi. In the corpus uteri, the lining membrane is not completely covered with epithelium, and still lacks that network of vessels which was torn off with the membranes. The epithelium is not completely restored until the fourth, sometimes not until the sixth week. In the sixth week, the appearance of the mucous membrane corresponds to the description given by Friedländer, Kundrat, and Engelmann.

In puerperal diseases, the changes of the mucous membrane are subject to such variations as to justify the statement that we cannot determine the extent and severity of the inflammation or the constitutional trouble from the alterations of the mucosa.

[I have endeavored to call attention to the leading features of this valuable contribution; its instructive details, as well as the results of the careful microscopic work, must be studied in the German article.

Although I have here and there pointed out statements which are contrary to the views I entertain, I do not wish to be considered as concurring in all of the author's statements which I have given without recording an objection; this is an abstract, not criticism.—Rep.] G. J. E.

9. Erosions of the Cervix Uteri. (*Gyn. Sec. Ger. Congress of Phys.*, Sept., 1877.)

S. Veit (Berlin) has made careful examinations of specimens freshly taken from the living body, to reconcile the conflicting opinions on this subject, and has arrived at conclusions conflicting in some points with Mayer, Emmet, and the French school. He finds that *all* erosions are covered with tender cylindrical epithelium, differing more or less from the vaginal pavement epithelium. The surface, even of the "simple erosions" of Mayer, is studded with numerous *pseudo*-papillary projections which V. declares are formed by grandular depressions. In the deeper layers, and sometimes disconnected with the glandular ducts, he found spherical bodies which may explain the "follicular erosions" of Mayer. Here the glandular depressions are deeper, communicate with one another, and show different varieties of epithelium. The "papillary erosion" is only a modification in which the process remains superficial, and only a few depressions force into the deeper layers. The form of ectropium described by Emmet depends upon the same glandular changes.

V. therefore rejects the ulceration or maceration theory, and also the causal connection of ectropium, since, without the latter, erosions are often found even in nulliparæ, while marked ectropium also often exists with no erosion.

V. believes that prognosis should be guarded in these cases; they too often are the commencing stage of carcinoma, and he states that the only sure diagnostic point is the excision of a small portion and its microscopial examination. Out of nine cases of carcinoma, in three V. could show direct origin from the glandular elements.

J. F.

10. THE MECHANICAL TREATMENT OF VERSIONS AND FLEXIONS OF THE UTERUS. (*Ibid.*)

AMANN (Munich) introduced his subject with three questions:

"1. Is mechanical treatment of versions and flexions of the uterus necessary?

2. Is it harmless and successful?

3. In what way is it carried out with the best results?

In answer to the first question, I admit that there are a certain number of versions and flexions which are of but little moment, and which need mechanical as little as they do medicinal treatment. But the number of malpositions which do need the help of the physician is very great. The mechanical treatment is good and necessary, not only in simple uncomplicated cases of malposition, but also in those complicated with textural changes in the uterus and its surroundings. It favorably affects the complications while acting directly on the malposition, whether the latter be primary or secondary. Although of more worth in the treatment of retro- than of ante-version or flexion, yet even for the latter it cannot be too highly praised. Even where inflammatory symptoms have first to be combated, the mechanical treatment is usually necessary before we attain a complete result. In cases of backward deviation it alone will often be sufficient.

To the second question I must answer that the intra-uterine treatment, as formerly carried out, often did more harm than good. And if at the present time the unskilled use of probes and badly fitting instruments sometimes does harm, this is not an argument against cautious mechanical treatment, but a warning to carry it out with care. The uterine probe plays the principal role in my method, and this I declare to be perfectly free from danger. The endometrium is extremely tolerant, and though I allow my patients, after the introduction of the instrument, to go about their duties, yet I cannot recall any dangerous symptoms in any one of over a thousand cases. I state with confidence that a careful mechanical treatment is not injurious or dangerous. As to the result, I must say that I am convinced that, as a majority of cases, a combined treatment will give us the most satisfactory results. I say *most satisfactory*, because even by combined treatment only a minimum, say 10 per cent, are radically cured. Of the remaining 90 per cent in about seventy the uterus is brought into normal position, but in a few weeks or months returns, yet as a rule not completely, to its former position. In the remaining 20 per cent, our treatment, though long continued, has little or no effect. Still, even this amount of success speaks strongly for the treatment. Even in cases where the malposition recurs, the uterine canal is widened for menstruation, conception, etc., and the uterus may more easily be again put in normal position.

As to the third question, I claim that the cure of uterine malpositions is only to be obtained through *intra-uterine* treatment. The Hodge pessary, the ceinture hypogastrique, etc., are only palliative means and adjuvants to the intra-uterine supports. My method is the following:

If complications exist with the malposition, these are first medicinally treated. The mechanical treatment is then begun as follows: Patient being on her side, I introduce the sound, straighten the uterus, and measure its cavity. I then introduce alongside the sound my intra-uterine pessary, consisting of a staff and broad plate of guttapercha, and remove the sound when the point of the staff has passed the internal os. The length of the staff must be ½ or 1 cm. less than that of the uterine canal. Sometimes the os must first be dilated with laminaria, or with Ellinger's dilator. When the intra-uterine pessary is completely inserted, the flexion is changed to a version. To overcome this, I use tampons of cotton, soaked in a 1% solution of carbolic acid, and introduced between the plate of the pessary and the opposite vaginal wall. If adhesions are present, they must be gradually overcome by increasing from time to time the size of the tampon. Lateral flexions may be treated in the same way, as well as those cases, so fruitful causes of sterility, in which there is a flexion of only the cervix, the body of the uterus being in normal position.

The tampons are changed every third or fourth day, the pessary removed only during menstruation, and in rare cases taken out for a short time when it occasions much pain and irritation of the endometrium. This interruption only slightly delays the result. The patients, unless unusually sensitive, go about their usual duties during the whole course of treatment.

From what has been said we may draw these conclusions:—1. My instrument may be used for all malpositions, even when adhesions exist. 2. It is held in the position in which it is inserted. 3. From its simplicity it is easily introduced and well borne." J. F.

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ORIGINAL COMMUNICATIONS.

ON THE INDUCTION OF PREMATURE LABOR IN THE ALBUMINURIA OF PREGNANCY.

BY

FORDYCE BARKER, M.D., LL.D.

It was quite out of my power to attend two meetings of the Obstetrical Society of this city, at which the subject that gives the title to this paper was discussed.[1] As I am informed that several of my friends, whose ability, acquirements, and position in the profession justly carry great weight in the expression of their views, advocated this procedure under circumstances where I could not sanction it, I feel called upon to give the reasons of my dissent, particularly as but little was said on the other side by those present, who differed from what appears to have been the general sentiment of the society.

I infer that, within two or three years past, there has been a growing tendency in the profession of this city to a frequent resort to the induction of premature labor in cases of albuminuria, from the fact that, since October, 1876, I have met other gentlemen in nine cases, the main object of the consultation being to decide as to the propriety and necessity of this operation. In eight of these cases, the pregnancy was allowed to go on; no convulsions occurred, and all the labors terminated happily as regards both mother and child.

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[1] March 19th and April 18th, 1878.

In the ninth case, the patient, a primipara, was believed to be seven months and three weeks pregnant. The urine was scanty and highly albuminous; there was some swelling of the feet and ankles, but there was no headache or pain anywhere, or nausea. In all respects she seemed to be in excellent health, except as regards the renal secretion. After a full and frank discussion with my friend, the attending physician, we quite disagreed as to the necessity or the propriety of inducing premature labor. As I subsequently learned, labor was brought on two days after our interview; she was delivered of a small, living child, and made a good convalescence. The case is described in the condensed report of the Proceedings of the Obstetrical Society, published in the May number of the *New York Medical Journal*.[1] In this case, I think both patient and physician are to be congratulated on the happy results of the operation, and I presume no one will ever dispute any claim of priority which may be urged by my friend, as having made the first report of the induction of premature labor under the circumstances which have just been described.

I know of no obstetrician at the present day, who does not believe that the induction of premature labor is a duty in a limited class of cases of albuminuria, where it becomes necessary to save either the life of the mother or the child. But I think most obstetricians believe that the necessity must be demonstrated by other symptoms than those alone which are found from the examination of the urine. I do not know of a single writer, in any language, who has advocated this procedure solely on the ground that the urine is highly albuminous, and that every specimen contains hyaline casts.

I think all will agree that the chief object proposed to be obtained by the operation is the prevention of convulsions. If it had been demonstrated that a large proportion of cases of albuminuria during pregnancy results in convulsions, either before, during, or after labor, then the argument in favor of the operation, because the urine is highly albuminous, would have great force. But in a very large proportion of cases of albuminuria during pregnancy, convulsions do not occur.

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[1] All these Proceedings will appear in the next number of this JOURNAL.

Blot and Litzman found albumen in the urine in 20 per cent of pregnant women; but no other observers have found anything like this proportion. Accurate statistics have not been accumulated in sufficient numbers to settle this question, but my own researches have led me to the conclusion that it occurs in about 4 per cent, or 1 in 25 women.

Authors differ greatly as to the comparative frequency of puerperal convulsions. In 38,306 labors reported by English authors, convulsions occurred once in 485 cases. Schroeder states that eclampsia is met with once in about 500 deliveries. Other writers have estimated the frequency as great as once in 350 cases. It varies greatly in different years, different seasons, and different localities. Cazeaux states that, while serving as *interne* in *Hotel Dieu*, he saw but 3 cases in 2,000 labors; but that in four months, in 1846, in his service at the *Hopital Clinique*, he had 7 cases. My own experience has been of a similar character. On one day in the winter of 1870, I saw three cases in consultation in private practice, and two others in my service in Bellevue Hospital. On another day of the same week, I saw three cases in consultation. No one will claim that there is such a variation in the frequency of albuminuria.

Now, if we make the lowest estimate of the frequency of albuminuria in pregnancy as 4 per cent, or 1 in 25, and the frequency of convulsions, as 1 in 350, the highest estimate, the chances of convulsions in albuminuria would seem to be as 1 to 14. But if we recall the fact that many cases of convulsions occur during labor, in patients in whose cases repeated examinations have failed to detect any evidence of renal disturbance until after the eclampsia, the chances of convulsions in albuminuria would seem to be considerably less than the above estimate.

In connection with this statement, let us look at another fact. A large majority of cases of eclampsia occur during and after labor. Schroeder states that, in 316 cases, convulsions came on during pregnancy in 62, 190 times during labor, and 64 times after labor, and I think, from my own researches, made twenty-three years ago,[1] that this is not far from the usual proportion. In many cases, the evidence of renal disturbance first appears after the convulsion. The exciting cause of convulsions in these cases must be developed by labor.

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[1] Trans. of the N. Y. Acad. of Med., Vol. I., p. 273.

The views of Traube and Rosenstein as to the etiology of puerperal convulsion seem in a qualified degree to be accepted by most recent writers on the subject, whether German, French, or English. But even if these views be modified by future investigations, the fact cannot be doubted, that the act of parturition, and the consequent disturbances of the circulation, exert great influence in developing eclampsia. If, therefore, the chances of eclampsia in albuminuria be as 1 to 14, or, to make the statement still stronger, we will say 1 in 5, we have sound reasons to infer that these chances would be greatly increased by an induced labor. It cannot be doubted that, in a large number of cases of albuminuria, even where albuminuria has been the predisposing cause, its existence has not been recognized, nor has the patient received treatment for this affection, previous to the explosion of the convulsions. Furthermore, the evidence cannot be called in question that, in a considerable percentage of eclampsia, the renal disturbances follow, but are not antecedent to the convulsions. Hence, sound reasoning would dictate that, when the albuminuria has been detected, this morbid condition should be cured before labor if we have at command resources by which this end can be accomplished.

Hence two questions naturally suggest themselves :

1st. Does parturition cure the albuminuria, and secure a probable immunity against convulsion ?

This can never be expected in those cases where the albuminuria is the result of structural changes of the kidney, included under the term Bright's Disease. While it may be conceded that in a majority of cases of the temporary albuminuria of pregnancy, all evidence of renal disturbance rapidly disappears after labor, this is not always the fact, as the history of two cases will illustrate. In one case, labor was induced ; in the other, it was spontaneous. Both were very instructive to me, as they suggested new points in regard to the etiology of convulsions which had never before occurred to my mind.

On the morning of Saturday, Jan. 27th, 1877, a physician called on me to ask me to visit, at the earliest possible hour, a lady in the upper part of the city, for the purpose of discussing with himself and another physician the propriety of inducing labor in a case of albuminuria. As a sister-in-law had just died at my house, and as the wife of my partner was then extremely ill, I was compelled to decline. At 4 o'clock, on the morning of the 29th, I was again summoned to see the case; I found her gasping and struggling for breath, with striking symptoms of what I regarded as pulmonary thrombosis. She died within a half-hour after my arrival. I then obtained the following history. The age of the lady was twenty, married thirteen months, and supposed to be in the eighth month of pregnancy. With the exception of some edema in the face, which her husband had noticed for several mornings, but which disappeared during the day, and a good deal of swelling of the lower extremities, she regarded herself as quite well, up to Wednesday, Jan. 25th. She had seen no physician since her pregnancy began, nor had she as yet selected her accoucheur. On the afternoon of this day, she had taken a long drive in the Central Park; on her return home, she suddenly complained of dizziness and imperfect vision, expressed great alarm, and soon had nausea and vomited. A highly intelligent physician, residing in the same street, was at once summoned. He, suspecting albuminuria, asked for consultation, and a gentleman of large obstetric experience was called in consultation. On questioning the patient, she could not recollect that she had passed water since rising in the morning, but as she felt no necessity of doing so, she positively refused to have a catheter passed. A drachm of the compound jalap powder, with five grains of calomel, was given. Soon after taking the powder, she fell asleep, not waking for three hours, when she passed about eight ounces of urine. One hour after this, a very free cathartic action took place, after which she slept until nearly eight in the morning. She expressed herself as feeling well, except that she had a great disgust for food, her appetite before this having been unusually good. On examination of the urine, it was found to have a specific gravity of 1.012, and on testing it with heat and nitric acid, nearly one-half solidified. One drachm of the citrate of potassa was ordered to be taken every third hour. On Friday, the 26th, other and more active, but not very efficient diuretics were ordered. In the evening, it was found that the quantity of urine was decidedly increased, but, at the same time, the proportion of albumen was much greater, so that it was estimated to be about 75 per cent. She slept well that night, but, on waking, she complained of headache and soon after of nausea, and vomited freely. She looked badly, complained of feeling very weak, and her pulse was small, weak, and 120 per minute. A third physician was added to the consultation. She was cupped over the loins, the acetate was substituted for the citrate of potassa, in half-drachm doses, with 5 drops of the tincture of digitalis every third hour. At the evening consultation, there was found to be no essential change in her condition, and it was then decided that a flexible catheter should immediately be passed into the cavity of the uterus. This was done at 10 P.M. At 7 A.M., Jan. 28th, she began to have some uterine contractions. At 2 P.M., a vaginal injection of hot water was given continuously for fifteen minutes. After this, the uterine contractions were regular, although not attended with much pain. At 7 P.M. the membranes ruptured, and "an enormous discharge of waters followed." At quarter before 8, she gave birth to a small but healthy child, which weighed a trifle less than five pounds. She complained so little of pain that no anesthestic was used during the labor. There was considerable, though not excessive hemorrhage before the delivery of the placenta, but after this, the uterus remained well contracted. The patient expressed great pleasure on seeing her child, and asserted that she felt perfectly well. She then slept quietly about an hour, when she had a convulsion. Chloroform was then administered to the degree of moderate anesthesia for a half-hour. At 11 P.M., she had a second convulsion, which was described as very severe. She was then kept profoundly anesthetized for an hour. She had no convulsions after this, but remained "in a kind of comatose sleep, until half-past 2 A.M., when she awoke and faintly asked to see her baby. Soon after, she began to gasp and struggle for breath, and her pulse was found suddenly to become feeble and irregular, 140 per minute. Two physicians had remained at the house during the night, and a telegraph boy was sent with a carriage for the third, but as he was not at home, it was sent for me.

It is evident that the induction of premature labor in this case was a grave error. We have all discussed it together very freely, and I am warranted in saying that we are entirely agreed that more efficient measures for relieving the renal disturbances should have been perseveringly tried, before resorting to this operation.

For the purpose of comparison, I will give a very brief sketch of the essential points of another case.

At 11 A.M., October 26th, 1877, I was urgently summoned to see a lady who had given birth, the evening before, to her third child. On entering the room, she gave me her hand and uttered a few words of recognition, but this was the last time that she attempted to speak. On putting my fingers on her pulse, I found it very feeble, irregular, and rapid. I asked to have the Venetian blinds thrown open, and the window curtains raised, when I observed an intense redness of the face, neck, arms, and hands, and my first impression was that the case was one of intensely malignant scarlet fever, as I have before met with two rapid deaths in puerperal women from this cause. But on placing the thermometer in the axilla, and finding it registered but 99°, this theory was at once given up. In the mean time her physician was giving me a rapid sketch of the previous history of the case. The lady was the daughter of a most eminent gynecologist. She was a lovely character, a universal favorite in society, and of a most bright and cheerful temperament, but for some weeks previously she had suffered much fatigue and mental anxiety from the illness of one of her children. Her medical attendant was an intimate friend of the family, and an able and accomplished physician. A few weeks before, some symptoms of not a very marked character had led him to make an examination of the urine, which he found highly albuminous. He had treated her so successfully that the symptoms of albuminuria had wholly disappeared, and there could only be discovered occasionally a trace of albumen in the urine, but she was still very anemic. On the morning of the 25th, while her physician was visiting her child, she mentioned that she had some pain in the back and pressure downward. About five in the afternoon, he again called to see the child, when she expressed the suspicion that her labor was coming on, and he asked for an examination. She had hardly time to get herself arranged in bed, before a living, active child was born. To use his own words, "the delivery was so rapid and painless, that it could not be called a labor." The placenta soon followed, and the uterus contracted well. The patient was in the best of spirits, and full of fun. Late in the evening, the doctor visited her again, and found that she had passed water freely, and was doing well in every respect. She slept well during the night, and was so well the next morning that she insisted that her husband should not remain with her, but go to his business. The doctor called about ten the next morning, when, in answer to his inquiry, she languidly answered that she was very well, but felt cross-eyed. On examination, he found that she was cross-eyed, and on feeling her pulse he was shocked by its bad character. On further inquiry, he learned that she had passed no urine since the evening before. He immediately introduced a catheter, but the bladder did not contain more than a drachm or two of urine. He at once directed that one of the carriages standing in front of the hotel opposite should be sent for me. I had not been in the room ten minutes, when she was seized with a convulsion. A hypodermic injection of one-third of a grain of morphia was at once administered, when the convulsion soon ceased. The intense redness of the surface disappeared, and for a few moments the character of the pulse was greatly improved. But this improvement was of short duration. It is not necessary for the purpose of this paper to describe in detail the active measures which were vainly resorted to for the purpose of relieving the overwhelmed brain, and restoring the powers of the feeble heart. She was never conscious two minutes after I entered the room, and life became extinct about five in the afternoon.

The practical question we are now discussing is, whether the induction of premature labor should be adopted as a rule of practice in albuminuria, as a security against eclampsia which may dangerously threaten life. Let me here say that experience has fully demonstrated the fact, that the quantity of albumen in the urine bears no relation to the violence of the eclampsia. In these two cases, convulsions occurred after labor; in the one, labor was induced; in the other, it came on spontaneously. In the former, the kidneys, having been subjected to intense pressure during the latter periods of pregnancy, are suddenly relieved by the escape of the excessive amniotic fluid and emptying of the uterus, and there follows an influx of blood into the half-paralyzed vessels of the kidneys —a temporary but most effective congestion. Cerebral anemia and serous edema were the consequences of this condition of the kidneys. Cardiac asthenia necessarily resulted from the cerebral asthenia, and, the conditions of hyperinosis and inopexia already existing, pulmonary thrombosis naturally followed.

In the latter case, the sudden removal of the pressure upon the kidneys, and the consequent intense congestion, induced complete ischuria, which was followed by acute uremia and paralysis of the vaso-motor system, as shown by the stasis of the capillary circulation of the surface. The intense uremia so overwhelmed the vaso-motor system that the irritation of the true spinal system produced its effects only in a moderate degree, and death rapidly ensued. I presume most physicians of large experience have met with cases, as the reports of many such can be found in obstetric literature, in which there has been an excessive amount of amniotic fluid, and after delivery the face has become flushed, the eyes fixed, the veins tense, and the woman suddenly becomes insensible, comatose, and violently convulsed.

There are other dangers from induced labor, so obvious that it is unnecessary for me to allude to them here.

2d. Has experience demonstrated that treatment can be made effective in curing the temporary albuminuria of pregnancy?

On this point Tyler Smith remarks, " It has been said that this disorder cannot be arrested during pregnancy, but I have never met with a case that resisted treatment, unless it had been neglected until towards the close of gestation."[1] I may be permitted to quote my own comments on the above statement, published four years since:[2] " While my experience will not warrant me in making so strong an assertion, yet I can truly affirm that I now rarely encounter puerperal convulsions, where the previous detection of albuminuria has led me to be particularly apprehensive of their occurrence. Indeed, I will go farther, and say that in most cases, where any of the predisposing causes that I have mentioned are discovered sufficiently early, they may be successfully treated, and convulsions will occur only in a small percentage."

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[1] Lectures in Obstetrics, Am. Ed., p. 154.

[2] Barker on Puerperal Diseases, p. 114.

I will not discuss this treatment of albuminuria in detail, as I have already done so in the work from which I have quoted ; but as illustrating how effective treatment may be, even in the most intense and gravest forms of this disorder, I will give the brief history of a case in which I was associated in the treatment of it with the father and brother of the patient.

In November last, I was asked to see Mrs. ——, who was supposed to be nearly eight months advanced in her first pregnancy. She had a remarkably bright intellect, and was naturally of a very cheerful temperament, but at this time she was a good deal depressed on account of her loss of sight, which had been coming on for a few days previously. At the time of my first visit, she could not distinguish persons, or tell the number of fingers held before her eyes. In fact, the amaurosis was nearly complete. She was confined to her bed by weakness: her pulse was rapid, ranging for ten days from 92 to 110 ; the face was moderately edematous, and she complained of headache, anorexia, and occasional nausea. The urine had been albuminous for some days, and the specimen which I saw, on my first visit, was estimated by all of us to be at least 85 per cent albumen. Not more than twelve ounces was supposed to have been passed in the previous twenty-four hours. Chiefly on account of the amaurosis and the danger of permanent blindness, we seriously discussed the question of the immediate induction of labor, but we finally decided to make a trial of other treatment for some days, before resorting to this measure. It is unnecessary to give in detail the treatment from day to day. The first means was venesection to the amount of about twenty ounces. Then blisters to the nape of the neck and over the temples. A drachm and a half of the compound powder of jalap was given every alternate morning. The acetate of potassa and digitalis in full doses, and subsequently the tincture of the muriate of iron were the medicines that were mainly relied upon, and she was kept rigidly on a milk diet. For three days, there was but little change as to the amount of albumen or the quantity of urine passed, while at the same time she seemed to lose strength, and her pulse became more frequent. Naturally both her father and herself became somewhat despondent from seeing no immediate result from the treatment. But after this, the improvement was very rapid in every respect. The secretion of urine became abundant, and contained only a trace of albumen, the headache disappeared, and after sixteen days, her sight was so entirely restored that she could read ordinary print easily, and my attendance practically ceased. I was not with her at the time of her accouchement, but I saw her soon after it terminated. It was probably premature by about two weeks, and was more rapid than most first labors. The placenta was adherent, and as considerable hemorrhage followed the birth of the child, her physician introduced his hand into the cavity of the uterus, detached the placenta, and removed it at once. A drachm of Squibb's fluid extract of ergot was given, and she had very little hemorrhage afterwards. She had no convulsions, either before, during, or after labor. All subsequent illness that she had seemed wholly due to the hemorrhage and the traumatic lesions incident to the labor.

I have seen several cases in which albuminuric amaurosis has disappeared at varying periods after parturition, but this is the only one in which I have seen the sight quite restored before labor. Indeed, I may add, I am not aware that any similar case has ever been published. I shall offer no comments on this case, as I think every one will agree that it needs none.

I trust that no one will draw the conclusion, from what I have written above, that I do not regard the induction of premature labor as ever a justifiable measure. On the contrary, I deem it an imperative duty to resort to this operation, when treatment has been thoroughly and perseveringly tried without success for the removal of symptoms of so grave a character, that there is a strong probability that their continuance would result in the death of the patient. In six of my own patients, and in four that I have seen in consultation, I have advised this operation. I may mention, as a curious fact, that four of these cases occurred within a period of five months, while, since November, 1874, I have seen many cases of albuminuria, yet I have not thought it necessary to resort to this operation in a single one.

Inasmuch as there are a few in our profession who are more influenced in their views of treatment by the weight of names which sanction any special mode of practice than by the force of analytical and logical reasoning, it may be well to add a few words as regards the historical aspect of this question. It is now twenty-one years since Braun first advocated the induction of premature labor in albuminuria, and the suggestion was a natural outcome of his exclusive views as to the etiology of eclampsia. His proposal was severely criticised by his German contemporaries who wrote on the subject, and of late years nothing has appeared from his pen relating to it. I therefore infer that his views have been essentially modified in this respect. Some years later, Tarnier urged this operation for the treatment of albuminuria, but recently he more cautiously expresses the opinion "that it may be serviceable in exceptional cases."[1] I am not aware that any of the later German writers advocate the treatment proposed by Braun. Spiegelberg, in his great work, the second volume of which has been published this year, says, in speaking of the treatment of albuminuria, "in its outbreak during pregnancy, an obstetrical treatment, especially the induction of premature labor, cannot be entertained."[2]

BATTEY'S OPERATION; THREE FATAL CASES, WITH SOME REMARKS UPON THE INDICATIONS FOR THE OPERATION.

BY

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St. Louis.

THE removal of the ovaries for the purpose of establishing the menopause, either to relieve the hopeless sufferer from chronic ovaritis and ovaralgia, and the incurable cases of long-continued uterine disease with menstrual exacerbation, or to check hemorrhage and limit the growth of uterine fibroids, is an operation so recent, so bold, and as yet so uncertain in its indications, that we have comparatively few cases on record.

Some brilliantly successful cases are related, also others in which recovery, but not relief from suffering, followed the hazardous operation; the fatal cases are rare, perhaps not all published.

It is not pleasant to report one's failures, but our failures are far more instructive than our successes; it is our failures that cause us to carefully reconsider the propriety of each step that has been taken, to seek for better methods, and thus achieve happier results.

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[1] L'Art des Accouchements, par P. Cazeaux, 9th Ed. Revue et annotée par S. Tarnier, p. 841. Paris, 1874.

[2] Lehrbuch der Geburtshülfe von Dr. Otto Spiegelberg, p. 568.

An analysis of my failures may serve as a warning and as a guide to others, and I have undertaken the unpleasant task of publishing the details of those three fatal cases as the best service I could render this young and promising operation.

Case I.[1]—Mrs. S., æt. 42; in former years unusually strong and healthy; has had four children; never complained of menstrual suffering or irregularity.

In October, 1875, two years before the operation, she began to suffer from nightly attacks of asthma, which, at the time of their first appearance, came with great regularity soon after eleven o'clock, and lasted, according to their severity, for an hour or more, ending with a bronchial cough and expectoration; during the remainder of the night and the entire day the patient was free from the annoying symptoms. As the disease progressed, her suffering became continuous, the trouble persisting, though in a milder form, throughout the entire day, but aggravated by a gastric hystero-neurosis—nausea and fulness of the stomach. These symptoms began to increase in intensity a few days previous to the appearance of the menstrual flow, and continued unabated during the entire period of uterine congestion: the nauseated stomach refused all nourishment, while cough and asthma precluded sleep; her condition became more bearable as the flow disappeared, but continued throughout the intermenstrual period, again to become more trying at the approach of the next catamenia.

The case had gone from hand to hand, and the pharmacopeia had been exhausted by the numerous physicians consulted, without affording the patient more than temporary relief by the use of narcotics.

Dr. Otto Greiner, who afterwards referred the case to me, when first consulted, found that auscultation and percussion revealed but little, notwithstanding the grave pulmonary symptoms; while, upon vaginal examination, he discovered an elongated, acutely retroflexed uterus, movable and readily straightened by the sound; he introduced a sponge-tent; the patient soon began to feel more comfortable, and in less than twelve hours the annoying cough and the asthma completely disappeared. The tent was followed by an intra-uterine stem, and as long as this could be borne, without irritating the mucosa, the patient was free from the distressing symptoms which had so long harassed her; she discontinued her morphine injections, left her bed, again relished her food, and slept quietly during the night without fear of cough or asthma. The symptoms, as I have myself several times observed, would abate soon after the introduction of the stem, to cease entirely within a few hours, but upon removal of the intrument, the former suffering was sure to return in from two to twenty-four hours. The bronchial and gastric symptoms responded with the greatest certainty and regularity to a change in the position of the womb.

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[1] I have cited this case as an exquisite example of bronchial hystero-neurosis in my paper on the hystero-neuroses (Vol. II., Transactions Am. Gynecolog. Soc.).

The sensitive condition of the uterus made it necessary to remove the stem frequently, until at last Dr. Greiner was obliged to desist almost entirely from its use; it was then, in the spring of 1877, that I first saw the patient in consultation with him. I found her a careworn, haggard woman, mostly confined to her bed, with suffering look, emaciated to the last degree, excessively irritable and nervous: conditions as described by Dr. G.; both ovaries sensitive and somewhat enlarged, especially the left.

We again tried the intra-uterine stems which Dr. Greiner had before successfully used. They always afforded relief for a short time, but within a day or two, finally within a few hours, the patient was forced to remove them on account of the pelvic as well as general suffering caused by them. Retroversion pessaries did but little good, some proving decidedly injurious; pressure, even the slightest, on the hypertrophied posterior wall of the corpus uteri caused intense pain, and a fearful exacerbation of the symptoms, as was demonstrated by a glycerine cotton tampon which was introduced with a view of elevating the fundus. Morphine injections were her only relief.

Medication had been vainly tried; the causation was evidently uterine, but the irritable hyper-sensitive condition of the enlarged womb no longer permitted any local application; removal of the uterus and the ovaries, or of the ovaries alone, seemed the only remaining means of relief, and the patient was accordingly left in my charge.

I observed her throughout the summer of 1877, seeking to relieve the most urgent symptoms. The menstrual exacerbations grew more marked: as the time of the period approached, the urine was passed more frequently, the nose began to itch and the nightly attacks returned, growing more severe and of longer duration, so as to make her suffering continuous when the flow began; nausea and asthma were constant, also the bronchial cough with a copious, yellow, muco-purulent secretion. This painful condition continued throughout the menstrual period and slowly disappeared after the cessation of the flow; then, in the intermenstrual period, came a time of comparative comfort; she could sit up, her appetite was fair, neither asthma nor bronchitis troubled her; but, dreading the intense suffering of the approaching period, she begged for the operation which had been suggested to her, well aware of all its dangers.

I determined upon extirpation of the ovaries. Clinical experiment had shown the trouble to be uterine in its origin, but it was now confined in its fearful intensity to the period of pelvic congestion, and this I expected to do away with by establishing the menopause, thus affording her one continued intermenstrual period, *i. e.*, a continued calm.

Some may urge that at 42 the change of life is so near at hand as to obviate the necessity of an operation, but her condition was such that she could not continue to suffer for years, not even for months, threatening suicide unless relieved. The chances were against this mere remnant of a woman, and Dr. Marion Sims, who saw the patient in August, although satisfied as to the propriety of the operation, thought that there was but little hope for the recovery of the patient, on account of her emaciation and extreme debility.

The patient having been carefully prepared, the *operation* was performed September 2d, 1877, fourteen days after the cessation of the menstrual flow, on a clear, cool day following a storm. The room, which had been thoroughly cleaned and well aired, was kept at a temperature of 75° F. to 80° F. and well saturated with moisture; Lister's antiseptic method was used to its fullest extent, carbolized sponges, carbolized spray, carbolized water for hands and instruments.

An incision of 3½ inches was made in the linea alba extending to within ¾ of an inch of the symphysis; the wound bled much more freely than was to have been expected in so cadaverous a subject; some of the vessels were secured by ligatures, others by the small bulldog forceps. The abdominal walls were almost completely atrophied, and the very vascular peritoneum was readily exposed and divided upon the director; some time was lost in checking the persistent oozing from this membrane; then the very fatty and vascular omentum was moved upward, and I introduced two fingers of the left hand to explore the pelvis; but as the chloroform could not be pushed to complete anesthesia, pulse and respiration having several times flagged, the contraction of the recti muscles was such that I could not operate freely, and I was obliged to enlarge the incision to 4½ inches; several coils of intestines escaped, and after they had been returned I was obliged to close the way by introducing four fingers of my left hand; they were somewhat numbed by the spray, and now constricted in the incision by the continued spasmodic contraction of the abdominal muscles, so that I was a little annoyed. I readily found the enlarged uterine fundus, which had been elevated by an assistant with two fingers in the vagina, and passing along the Fallopian tube, seized the left ovary between thumb and middle finger. It was about normal in size, not adherent, and yet I found it difficult to move it upward, notwithstanding the assistance rendered by pressure from the vagina; still holding the ovary with two fingers, I seized it firmly with a strong curved dressing forceps, and with difficulty succeeded in dragging it sufficiently into the incision to tie the mesovarium with a single ligature of heavy braided silk; the ovary was then cut away with curved scissors, leaving a pedicle of less than half the thickness of a lead pencil; the ligature was cut short and dropped.

The left ovary, which was somewhat larger and also without adhesions, was quickly found, and treated in precisely the same way.

The pelvic cavity was sponged, and but little blood found in it; the omentum was replaced as far as possible, and the wound closed with silk sutures; Lister's dressing was applied and covered with a heavy pad of carbolized cotton.

One and one-half ounces of chloroform were used during the operation, which lasted one hour and ten minutes.

After condition: The patient soon rallied from the effects of the operation, with a pulse of 94 and a respiration of 28; did not vomit for the first nine hours; then nausea, with a slight but irritating cough, set in, which readily yielded to a slight increase of the morphine doses (⅛ grain every three hours *subcutaneously*). Urine was drawn every four to six hours; morphine continued, and given more frequently as pain manifested itself. A few tablespoonfuls of milk and gruel was all the nourishment she could be induced to take; the mere sight of broth, beef-tea, milk punch, etc., nauseated her, as she had so long depended upon such diet for her sustenance; a little champagne and brandy with ice was well borne, but soon she refused everything but soda and toastwater; milk punch was given per rectum.

Abdominal pain was most severe soon after the operation, then gradually disappeared, and on the second and third days she was entirely free from it; early on the third day she complained of a pain in the lower ribs, while the pain in the back was much less than on the first day.

The pulse rose steadily from 94 to 100 on the second day, 114 on the fourth, and 120 on the fifth; as the pulse slowly but steadily increased, the respiration decreased in frequency; 28 to 30 per minute on the first day, it was but 22 on the second, 20 on the third, 14 to 18 on the fourth, at one time on the fifth day only 10; the highest temperature was 100.8° F., on the fourth day, ranging between 100° and 100.6° at other times. She died on the sixth day after the operation from inanition and sheer exhaustion.

Post mortem examination, sixteen hours after death: Abdomen greatly distended; abdominal wound thoroughly adapted, but not united; intestines distended with gas, their surface scarce reddened, showing but faint traces of peritoneal irritation, most distinct in the upper part of the abdominal cavity.

The uterus was normal in position, no longer retroflexed, not congested; its peritoneal covering was somewhat thickened and dimmed. No adhesions and no inflammation of the left broad ligament; the pedicle appeared as a rounded stump covered by a slight deposit of lymph; it had contracted so that the ligature was ready to slip off. About the pedicle of the right ovary there were some adhesions, in evidence of a slight inflammation in its vicinity; it was still firmly clasped by the ligature.

The omentum was somewhat injected; there was no fluid in the pelvic cavity. Liver, spleen, and kidneys healthy; lungs almost normal, no adhesions, somewhat emphysematous, but the bronchi free, nowhere enlarged, their mucous membrane perhaps a trifle thickened; heart small.

Case II.—Mrs. S., æt. 33, healthy and strong in girlhood; menstruation regular and without pain until her eighteenth year, when she received a severe blow across the abdomen from a falling sign; this was followed by a burning pain in the right side and constant suffering for a considerable time; she became subject to fainting spells without loss of consciousness; intense pain preceded and followed the menses, and she frequently had a feeling as if something were jumping in her stomach; suffered from globus, etc.

Married eight years ago, never conceived; after marriage her troubles increased; she was a constant sufferer, especially during the last three or four years, from menstrual pain, headaches, pains in abdomen, breasts, and throat, generally accompanied by swelling of those organs; swelling of the abdomen was frequently followed by a watery discharge from the vagina; she was unable to work for months at a time, and often confined to her bed for weeks.

I first saw the patient in the summer of 1876, with Dr. Hoffmann, who had attended her for many years, mainly regarding her nervous and hysterical symptoms, but, thinking that he had discovered an abdominal tumor, consulted me with a view to operation.

I found her a bright mulatto, with an exquisite figure and well-rounded limbs, nervous and hysterical: left breast enlarged and painful, especially the nipple; the left ovarian region very sensitive, even slight pressure upon this part causing abdominal pain, swelling of the throat, choking sensation, inability to talk, and gasping for breath; but the most careful bimanual examination revealed but indistinct signs of some abnormal resistance in the vicinity of the left ovary—this was after a period of intense suffering and watery discharge. The uterus was normal in size, acutely anteflexed with an eroded os, some endocervicitis; passage of the sound intensely painful.

I made an application to the cervix, and advised astringent injections, and iodide with bromide of potash, and valerian.

The erosions readily healed, and the headache became much less constant and annoying; but her general condition grew slowly worse until the time of the operation, Feb., 1878, her symptoms, varying at times, remained very much the same; eyes pained, most in the morning, lids felt heavy and thick, vision was sometimes blurred or double; pain in the breasts, mainly the left, was at times so severe as to necessitate injections of at least $\frac{3}{4}$ grain of morphia; frequently felt as if water were moving in her left side; could not stand squarely on both feet, as it caused her pain in the left hip; the left anterior superior spine was painful on pressure, the pain radiating into the abdomen; rotation outward and abduction of the left leg hurt intensely, and caused pain in the knee; was obliged to draw her legs up in order to rest comfortably in bed; often had a feeling of contraction, shortening in the muscles of legs, hip, back and neck; could not stoop on account of the faintness and abdominal pain it caused, and was obliged to kneel in order to reach anything low. Many of these symptoms were aggravated during the period of menstrual congestion.

The catamenia were frequent when I first saw her, coming every two, or at most three weeks, either very profuse or lasting scantily for six or eight days; later the flow came at longer intervals, irregular, and much less free.

Coitus was excessively and unbearably painful.

Memory began to fail; she frequently, even while in bed, complained of dizziness from which she almost always suffered if on her feet; at times seemed but half conscious, her actions beyond her control; every four or five months was seized with an epileptic attack of several hours' duration.

An interesting and puzzling feature of the case was the periodical discharge of large quantities of a clear, inodorous, watery fluid, coming every two or three months, apparently in no connection with menstruation, although sometimes preceding the flow. A period of great suffering preceded the discharge; the abdomen would swell, and was so much distended, especially in its upper third, under the ribs, that she could not fasten even the loosest clothing, and felt as if she must burst; at the same time complaining of severe pain in back and hips; and at these times the resistance in the left side was more distinct, evidently a cyst, a thin sack with fluid contents, which, however, I could at no time clearly outline; pressure upon the tumor gave her the feeling of squeezing a bladder full of water, caused intense local pain, sickness of the stomach, a choking sensation, and loss of voice; the right ovarian region, which was apparently free, did not so respond; the watery discharge, lasting several days, sometimes came in gushes; at others, would trickle away for hours, but was always very abundant, even so as to saturate the bed, and drip through upon the floor; at the same time she would pass small quantities of wine-colored urine, and I have myself drawn the dark urine from the not distended bladder, while the discharge was going on; this fact, together with the relaxation of the abdomen, and the diminution in the size of the tumor which followed the discharge, tempted me to consider the case as one of *hydrosalpinx* or *hydrops tubæ profluens* (Schroeder, p. 320, Scanzoni, Vol. II., p. 75); but chemical examination proved the fluid to be nothing but hysterical urine. It was perfectly clear, colorless, inodorous; specific gravity varying from 1002 to 1005; reaction acid, but scarce'perceptible, and upon standing for a length of time, it had the odor of decomposing animal matter, and not of fermenting and alkaline urine; upon evaporation, the residue was found to contain oxalate of lime, urates, and urea, proving that the fluid could not possibly be secreted by a cyst, but must come from the kidneys.

I once gave jaborandi daily for one week, while the fluid seemed accumulating and the abdomen was very tense; she took at first an infusion of ʒ i. to ℥ iv. at a dose, later ʒ ij. and ʒ iij. to ℥ iv.; this relieved somewhat, but was followed by unusual symptoms, unilateral sweating; a cold perspiration appeared on the left half of the body, and continued eight or ten hours, the right side remaining perfectly dry; there was also a trembling of the limbs, and a numbness in the left lower arm and in the left side of the trunk.

Dr. Parvin kindly examined the patient with me, in June, 1877, and confirmed the diagnosis of that questionable tumor, which he described as a yielding resistance in the left side, a fluctuating tumor with indistinct outline, possibly an ascitic fluid; this was at a time when she was enlarging.

Dr. Sims saw her in August, when her abdomen, which, by the way, was covered with almost two inches of adipose tissue, was more relaxed, and distinctly felt a cyst in the left side, but could not fix it; he considered this a typical case for Battey's operation.

Nothing seemed to relieve her suffering; tonics, anodynes, rest, all gave but temporary relief, while her condition grew steadily worse; the slightest exertion brought about that fearful "misery" in her left side; walking up a small flight of stairs was followed by a day's suffering; while in bed, a heavy step on the floor invariably sent a thrilling pain through her from the left side upward. Every possible means of relief which competent men could suggest had been tried in vain, and I determined upon the only course left—the extirpation of the ovaries, which I looked upon as the offending organs, most especially the left, which was probably in cystic degeneration; if the cyst should prove to be one of the tube or the broad ligament, it was determined to remove both cyst and ovary.

The operation was performed February 28th, 1878, four days after the cessation of the menstrual flow, but not in the most favorable surroundings. The utmost possible cleanliness was observed without resorting to the antiseptic method; a one-per-cent salt spray was used to moisten the atmosphere.

The incision was made at once from the navel to one-half inch above the symphysis, through one and one-half to two inches of adipose tissue; no bleeding; the peritoneum was readily exposed and incised; the intestines were pushed back and the fundus of the anteflexed uterus readily found, but passing from this along the Fallopian tube toward the left ovary, which the assistant endeavored to push up, it was with difficulty that I found this adherent and degenerated organ among the walnut-sized cysts; it was firmly seized with the forceps, but could not be drawn into the incision; one of the cysts was ruptured and the entire mass, the cystic ovary with a cyst of the parovarium, was finally tied in the depth of the pelvic cavity with a silk ligature which was cut short and dropped. A part of the omentum adherent to the ovary was also ligated. The right ovary, also adherent and in cystic degeneration, was easily found and tied, together with a cyst of the parovarium.

The pelvis was sponged, omentum replaced, and double silk sutures used to close the incision, which was covered with a Lister dressing.

The operation lasted just one hour; less than two ounces of chloroform were used; patient bore the anesthetic unusually well, did not vomit during or after the operation; pulse soft, normal, averaging 70 during the operation; traction upon the ovary was at once followed by a pallor of the face, sinking expression, and a sudden slacking of the pulse, which became very feeble, scarce perceptible, and only 40 per minute; as traction was diminished, the patient at once rallied, the pulse again became stronger and rose to 60, finally 70. The same symptoms were observed to follow each traction upon the ovary.

After-condition.—Patient rallied well from the operation with her normal pulse of 76 to 80; morphine was given subcutaneously; the usual treatment was followed; the pulse slowly rose and, notwithstanding a very comfortable night, symptoms of peritonitis appeared on the morning of the second day; by evening her condition seemed critical; pulse 132; I gave her ʒ i. of quinine by subcutaneous injection in the course of three hours (chin. ʒ i., aq. ʒ ij.); marked improvement followed, pulse 120, fuller; morphine relieved the violent quinine tremor; she seemed to rally for some hours, but then steadily failed and died two and one-half days after the operation.

Post-mortem examination, eight hours after death: Abdomen considerably distended, incision united; peritoneum and intestines scarce reddened; no dulness of the peritoneal covering; no adhesions either about the intestines or the abdominal wall, the uterus or the pedicles; no lymph, only a very little of a brownish fluid in the pelvic cavity; slight lymphatic exudation upon the posterior aspect of the *now straightened* uterus; pedicles in excellent condition, rounded and coated with a yellowish lymph; omentum reaching very far down and somewhat inflamed.

Case III.—Mrs. K., æt. 31; was afflicted with caries in childhood; first menstruated in her 13th year; the catamenia continued regular and painless, she herself being perfectly healthy. Soon after her marriage, in her 23d year, eight years ago, to a vigorous, strong man, the first symptoms of uterine trouble appeared, and since then her suffering has steadily increased, until, within the last six months, she has been totally unfit for work and confined to bed a great part of the time; she has never conceived. Backache and hypogastric pain preceding each menstrual flow, and upon the first day of its appearance, inaugurated these years of suffering; the flow was at some times scanty and at others profuse; occasionally backache and exquisite hypogastric pain continued during the three or four days of its duration; later the premenstrual suffering was augmented by headaches, which were so intense as to cause her to faint with pain; menstrual hystero-neurosis of the stomach was very marked, the distention of the epigastrium not unfrequently terminating in vomiting; a year ago she suffered so intensely from an intermenstrual backache, which left her during the continuance of the flow, that she was unable to move from her bed; fainted very easily upon the slightest provocation; has had several attacks of pelvic cellulitis. During the long period of her suffering has been in the hands of quite a number of physicians.

I saw the patient first in January, 1878, at the request of Dr. Summa, then in attendance, and of Dr. Baumgarten, who had been consulted in the case; she had just recovered from an attack of pelvic inflammation and period of most excruciating menstrual suffering. I found her a very intelligent lady, considerably emaciated, with an appearance of long continued suffering. She had been a complete invalid for over six months, unable to undertake even the slightest household duties; could, when feeling well, walk but very slowly and short distances; for the past four weeks had been confined to her bed constantly; she complained of unceasing backache, headache, hypogastric pain, and severe menstrual suffering; in short, she was slowly failing, unable much longer to resist the constant and increasing pains.

The abdomen was sensitive, especially so the right hypogastric region, while the left, though very tender, was less painful. The uterus was normal in size, anteflexed, with an elongated conical cervix pointing toward the symphysis ; the sound entered readily; the right ovary was easily seized between the examining fingers; it was excessively sensitive, of the size of a small egg, and of a consistency which seemed to indicate a subacute inflammatory enlargement; *it appeared to be not adherent and movable ;* the left ovary was smaller and less sensitive. Believing the suffering to be due to a morbid condition of the ovaries, and that the uterine flexion could be entirely neglected, I advised absolute rest, warm applications to the hypogastrium, nourishing diet with mild stimulants and tonics; later the hot vaginal douche and concentric blisters in the region of both ovaries; neither iodide of potash nor quinine were borne by the patient.

Her condition steadily improved, but although she now rested well, her appetite was good, and she gained in flesh, her sufferings remained the same; pain in back and sides was continuous, greatly increased by motion; the effort of walking from the bed, three or four steps to the rocking chair, was followed by more violent suffering; the menstrual period, however, was almost painless.

Further medication seemed useless; the disease of the ovaries, the source and centre of all the troubles, slowly progressed, notwithstanding the improvement in her general condition, and no treatment of any kind could check the advance of this chronic ovaritis; nothing short of a removal of the offending organs promised relief to the sufferer; well aware of the dangers of the operation, she not only gladly consented, but even urged its speedy performance.

Operation.—The most careful preparations having been made, I operated March 11th, 1878, five days after the cessation of the menstrual flow, observing all the precautions of the antiseptic method as taught by Lister.

Chloroform was first used, but the patient bearing it badly, and collapse threatening, ether was resorted to; pulse and respiration at once improved, and she was brought fully under the influence of the anesthetic. The abdominal incision, which was made fully four inches in length, was followed by a copious oozing of blood from the cutaneous vessels, giving some little annoyance; the patient was a bleeder; the flow having been stopped, the peritoneum was incised, and with two fingers of my left hand I entered the pelvic cavity, touching first the fundus of the uterus. I passed from this along the tube in search of the left ovary, but was unable to discover anything resembling that gland in feel; at the bottom of the pelvic cavity, near its left lateral wall, I found a number of small cysts and small soft bodies, which partially resembled loops of intestine, containing gas and feces; the mass was immovably attached to the floor of the pelvis. I next introduced my whole hand, but again finding nothing but this soft, nodular mass, I seized a part of it and endeavored to pull it up; it did not yield; I then grasped it with the curved dressing forceps, but did not succeed much better in moving it; a temporary ligature of heavy braided silk was applied, and the mass seized with a second forceps; by steady traction upon both instruments, it was raised a little and a second ligature placed; a third was found to be necessary, and when finally I endeavored to cut the pedicle with the long scissors, in depth of the pelvis, I found that at least half of the degenerate ovary remained in place, attached to the surrounding tissues.

The right ovary was then sought, and was found to be equally low down and still more immovable than the left; a distinct cyst, as large as a hickory nut, was at once ligated, but the mass of the degenerated ovary, firmly bound with the broad ligament to the sides and base of the pelvis, could not be properly tied and removed, and to remove the ovary only in part, would be to leave the operation incomplete, and the patient exposed to the same sources of suffering as before; nothing could be done in that depth and darkness; the pulse was weakening, no time was to be lost, and after a brief consultation, the abdominal incision was enlarged to two inches above the navel, and the pelvic cavity fully exposed; the large nodular mass was then tied with a double ligature passed through the broad ligament, and entirely removed. The left ovary was again examined, and as it was found that considerable of the soft reddish tissue of the organ had been left, the fourth ligature was applied to it.

The pelvic cavity was sponged; the coils of the intestines, much reddened, with some lymph here and there upon their peritoneal surface, were slowly returned, and the incision closed with silk sutures; the lower angle, through which the ligatures were passed out, being left open for drainage purposes. The operation was a very trying one, lasting a little over two hours, during which time, notwithstanding the use of ether, it twice became necessary to resort to artificial respiration.

After-condition.—The patient rallied fairly from the operation, felt comfortably, and did not vomit, but within two hours the condition changed; a free flow of blood came from the open lower angle of the incision; the dressing was removed, and applied to the abdomen; the bleeding did not stop until the lips of the wound were freely touched with perchloride of iron; trouble seemed due to the cutaneous vessels and capillaries, which bled so freely in the beginning of the operation: the hemorrhage was checked for over an hour, but then the blood suddenly welled up from the depth of the cavity; several stitches were cut, and a careful examination made; there was no fluid in the cul-de-sac, no dulness in the pelvis, and the flow which came, at least partially, from the very vascular peritoneum, was finally stopped by ergot and ice.

She took stimulants and some little nourishment; did well for the first twenty-four hours following the operation, but after that, she slowly failed; pulse steadily increasing in frequency; death occurred on the third day.[1]

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[1] I am under obligation for efficient assistance in the various operations to Drs. Hodgen, Baumgarten, Greiner, Engelmann, Sr., Green, Prewitt, Mudd, Nel-

A post-mortem examination was not permitted.

I have reported these cases in detail, as the operation is so recent a one that the unfortunate result, thrice successively fatal, must naturally lead us to inquire whether the operation was justifiable or not.

In no instance did I undertake the operation until I had myself vainly attempted to afford relief by local and general treatment, and unless the patients had for years before been under the care of competent physicians, who had been unable to stay the steady progress of their agonizing suffering.

In Case I. the ovaries were removed, to bring about the menopause, and thus check the reflex menstrual suffering, which had so greatly reduced the patient, and was rapidly hastening her end by exhaustion, if it did not lead to suicide.

Case II. was one of chronic ovaritis, in which the reflex suffering was intense and continuous, steadily increasing, confining the patient to bed, and rendering her, the wife of a working man, a helpless invalid, confined to her bed with the prospect of still greater trials awaiting her. The ovaries, especially the left, which was known to be in cystic degeneration, were also directly the seat of much pain.

Case III. was a typical case of chronic ovaritis and ovaralgia, with occasional attacks of cellulitis, in which the suffering was mainly confined to the region of the unquestionably diseased ovaries, without marked menstrual exacerbation; but this pain was such as to confine the patient to her bed, and to torture her constantly. It steadily increased, and Battey's operation was performed to remove the offending organs.

The operation did not prove to be an easy one in either of the cases, on account of the tension upon the broad ligaments and the adhesions binding down the ovaries. In the first case only could the ovaries be pulled up somewhat, partially into the incision; in the second, we were obliged to tie in the depth of the pelvic cavity; and in the third, the firm adhesion of the degenerate ovary with the broad ligament to the floor of the pelvis necessitated the exposure of the pelvic cavity, in order that it might be possible to complete the operation.

son, Evers, Schenk, Bierwirth, Kirchner, Hoffmann and Summa, but most especially to Dr. John T. Hodgen, for his advice and assistance in the after-treatment as well as the operation.

In the first case, the patient was a miserable wreck, a haggard, weak, worn-out woman, with but slight chances of surviving the serious operation, for which she prayed as her only hope. Death was almost an inevitable result, and it was for this reason that Dr. Sims at first differed with me as to the propriety of operating; not until he saw the patient in her agony did he advise the operation.

She died of inanition and an inability to overcome the shock of the operation. The post-mortem revealed but trifling signs of pelvic or peritoneal reaction.

The second was a bright mulatto, in whom the feeble power of resistence characteristic of her color was not increased by years of suffering. The fever was not high, peritonitis moderate, the pedicle in good condition.

In the third case, the operation was tedious and severe, and the patient weakened by the hemorrhage following, so that she succumbed to a comparatively slight reaction.

Notwithstanding the unfortunate termination, I consider that in these three cases the operation was not only justifiable, but that it was decidedly indicated and demanded.

THE INDICATIONS FOR BATTEY'S OPERATION, WITH A SUMMARY OF FORTY-ONE CASES OF EXTIRPATION OF THE OVARIES.

The operation has now been performed forty-one times, and I will but call attention briefly to the practical points brought out by an analysis of their more important features, as I have endeavored to tabulate them in such a way that comparisons can be readily made.

Table I. contains a list of forty-one cases, five of which (marked *) I was obliged to omit in the comparison of indications and results, so that Tables II. and III. are based upon an analysis of the thirty-six complete cases.

Number 19 (Sims) could not be utilized, as the operation was only attempted, but could not be completed; 39 and 40 (Hegar) were too recent to permit the statement of a result; and I may here say that my knowledge of Hegar's case is based upon occasional references in Hegar's articles in the *Centralblatt f. Gynäkologie.* A detailed account of the cases I could not obtain, and hence am not positive as to the correctness of

Number of Cas	Operator.	Locality.	Number of O erator's Case.	Indications for Operation.	Abdominal or vaginal operation.	One or both ovaries removed.	Condition of ovaries when noted.	Result of Operation.
1	Battey	Georgia	1	Amenorrhea, menstrual molimen, convulsions, repeated pelvic cellulitis.	Abdominal.	Both.		Cure complete.
2			2	Persistent ovaralgia (left ovary.)	Vaginal.	One.	Cystic degeneration.	(Temporary relief) not improved.
3			3	Continuous ovaralgia, endometritis, insanity threatened.	Vaginal.	Both.		Cure complete.
4			4	Ovaralgia aggravated by menstruation or exertion.	Vaginal.	One.	Not entirely removed.	Somewhat improved.
5			5	Ovaralgia, dysmenorrhea, coccyodynia.	Vaginal.	One.		(Temporary relief) not improved.
6			6	Constant ovarian pain, ovarian dysmenorrhea, insanity threatened.	Vaginal.	Both.		Died.
7			7	Constant ovarian pain, dysmenorrhea.	Vaginal.	Both.		Cure complete,
8			8	Constant ovarian pain, irritable uterus, metritis, pelvic cellulitis.	Vaginal.	Both.	Bound down, not entirely removed.	Not improved.
9			9	Second operation on Case 5.	Vaginal.	One.	Not entirely removed.	Not improved.
10			10	Constant ovarian pain, ovarian dysmenorrhea.	Vaginal.	Both.		Died.
11			11	Atresia vaginæ.	Abdominal.	Both.		Cure complete.
12			12	Ovarian and pelvic pain, dysmenorrhea, epileptic convulsions.	Vaginal.	Both, right only partially removed.		Not improved.
13	Sims	New York	1	Dysmenorrhea, menorrhagia, retroflexion and hypertrophy of uterus. Uterine treatment failed.	Abdominal.	One.	Cystic.	Cure complete.
14			2	Diarrhea, symptoms of fissure ani or of ulcer within the sphincter. Intense and ever-recurring recto-enteralgia.	Abdominal.	One.	Cystic.	Somewhat improved.
15			3	Dysmenorrhea, pain in sacro-pelvic region, ovarian pain aggravated by menstruation.	Vaginal.	One		Worse.
16			4	Dysmenorrhea, pelvic pain, anteflexion, ovarian pain.	Vaginal.	One.	Cystic.	Worse.
17			5	Ovarian pain aggravated during menstruation, retroversion.	Abdominal.	Both.	Cystic.	Died.

18	....	....	6	Dysmenorrhea, retroflexion, pain in lumbosacral and pelvic regions, coccyodynia, photophobia.	Vaginal.	One.	....	Much worse.
19*	....	....	7	Dysmenorrhea, ovarian and pelvic pain, hypertrophy of posterior wall of uterus, uterus bound down by adhesions.	Vaginal.	Operation abandoned.	Bound down.	Operation abandoned.
20	Hegar	Freiburg....	1	Ovaralgia.	Abdominal.	Both.	One cystic, other slightly changed	Died.
21	....	....	2	Uterine fibroids.	Abdominal.	Both.	....	Greatly improved.
22	....	....	3	Uterine fibroids.	Abdominal.	Both.	....	Greatly improved.
23	....	....	4	Uterine fibroids.	Lateral incisions directly over ovaries.	Both.	....	Greatly improved.
24	Goodell.....	Philadelphia.	1	Uterine fibroids.	Vaginal.	Both.	....	Cure complete.
25	....	....	2	Pernicious menstruation.	Vaginal.	Both.	....	Somewhat improved.
26	....	....	3	Pernicious menstruation.	Vaginal.	Both.	....	Died.
27	Thomas	New York...	1	Ovaralgia, dysmenorrhea, petit mal.	Abdominal.	Both.	Cystic.	Somewhat improved.
28	....	....	2	Dysmenorrhea, temporary insanity.	Attempted by vaginal, completed by abdominal.	One.	Enlarged.	Died.
29	Trenholm...	Montreal....	1	Hemorrhage from uterine fibroids. Intense dysmenorrhea from ovarian congestion.	Abdominal.	Both.	....	Cure complete.
30	....	....	2	Chronic ovaritis and ovarian displacement.	Vaginal.	One.	....	Not improved.
31	Peaslee.....	New York...	1	Absence of uterus, amenorrhea, pain on coitus, hystero-epilepsy.	Abdominal.	Both.	Cystic.	Died.
32	Sabine......	New York...	1	Ovaralgia, dysmenorrhea, inability to step with left leg.	Abdominal.	One.	Normal.	Greatly improved.
33	Gilmore	Alabama....	1	Atrophy of uterus, amenorrhea, cerebral congestions with convulsions, threatening life. Increasing mental hebetude.	Abdominal.	Both.	....	Cured (?)
34	Pallen......	St. Louis....	1	Dysmenorrhea and persistent ovaralgia.	Abdominal.	Both.	Right, cystic; left, dislocated.	Died.
35	Engelmann..	St. Louis....	1	Gastric and bronchial hystero-neurosis, with intense menstrual exacerbation, retroflexion, metritis.	Abdominal.	Both.	Slightly enlarged.	Died.
36	....	....	2	Ovaralgia aggravated by slightest exertion and by menstruation, dysmenorrhea, anteflexion, epileptiform attacks.	Abdominal.	Both.	Cystic, bound down.	Died.
37	....	....	3	Ovaralgia, ovarian dysmenorrhea, constant pelvic pain, anteflexion.	Abdominal.	Both.	Cystic, firmly bound down.	Died.
38*	Koeberle....	Strasburg....	1	Retroversion, constipation, neuroses.	Abdominal.	One.	....	As regards position of uterus, good.
39	Hegar	Freiburg....	5	Uterine fibroid.	Abdominal.	Both.	....	Too recent.
40*	....	....	6	Perioöphoritis, salpingitis, perimetritis.	Abdominal.	Both.	....	Too recent.
41*	Kaltenbach & Freund.	....	1	Uterine tumor.	Abdominal ?	Both ?	....	Died.

every detail. 38 (Koeberle) does not belong here, as it was an accidental extirpation of the ovary, in order to facilitate the object of the operation, the fixing of the broad ligament in the abdominal incision, in order to straighten a very annoying retroflexion; 41 (Kaltenbach and Freund) I have no history of.

The most favorable view possible has always been taken in giving the results of cases.

TABLE II.

CLASS OF CASES OPERATED ON, AND RESULTS ACHIEVED.

RESULTS.	INDICATIONS.											
	Reflex Neuroses.		Hemorrhage Uterine Fibroids.		Malformation Sexual Organs.		Ovarian Dysmenorrhea.		Ovaritis, Ovaralgia, etc.		Total.	
	No. of cas.	Per cent.	No. of cas.	Per cent.	No. of cas.	Per cent.	No. of cas.	Per cent.	No. of cas.	Per cent	No. of cas.	Per cent.
Cured	...	....	2	40	2	66.7	2	40.	2	10	8	22.8
Greatly improved	...	....	3	60	...	....	...	....	1	5	4	11.4
Somewhat improved	1	50.	...	....	...	....	1	20.	2	10	4	11.4
Not improved	...	....	...	....	...	....	...	....	6	30	6	17.2
Made worse	...	....	...	...	...	....	...	....	3	15	3	8.6
Survived operation	1	50.	5	100	2	66.7	3	60.	14	70	25	69.4
Died	1	50.	...	....	1	33.3	3	50.	6	30	11	29.6
Total	2	5.7	5	14.3	3	8.6	6	16.6	20	57.1	36	100

Table II. shows us that in 20 of the 36 cases, which have served for this compilation, the operation was performed on account of suffering caused by ovaritis and ovaralgia, and in 6 ovarian dysmenorrhea is given as the indication, so that we may say that ovarian disturbance was the cause assigned in 26 of the cases; uncontrollable hemorrhage and suffering from uterine fibroid led to the extirpation of ovaries in 5 cases; malformation of the sexual organs and menstrual molimina in 3 cases, and reflex neuroses in two. In 25 cases the ovaries were diseased, while in the other 11 they were normal and removed only to bring about the menopause.

The results of the operation, as regards its danger to life, are 11 deaths, 30.5 per cent, and 25 recoveries, 69.5 per cent; of the 25 patients who survived the operation, 16 were improved, 44.4 per cent of the whole number operated on, while 9 were not bettered, 25 per cent; to be more precise, of the 36 cases, 8, 22.2 per cent, were cured; 4, 11.1 per cent, were greatly improved, 4 somewhat improved; 6, 16.6 per cent, not improved, and 3 made worse.

The success is best and the percentage of death smallest in those cases in which both of the normal ovaries were removed to bring about the menopause and to check hemorrhage from uterine tumors; we have 5 such cases, all of which were improved (2 cured, 3 greatly improved); but one death has occurred, and that the case of Kaltenbach and Freund.

TABLE III.

METHODS OF OPERATION AND THEIR RESULTS.

RESULTS.	Ovaries Removed.				Mode of Operation. Incision.				Total.	
	Both.		One.		Abdominal		Vaginal			
	No. of Cases	Per cent.	No. of Cases	Per cent	No. of Cases	Per cent	No. of Cases	Per cent	No. of Cases	Per cent.
Cured....................	7	29$\frac{4}{24}$	1	8$\frac{1}{3}$	5	26$\frac{6}{19}$	3	18$\frac{3}{4}$	8	22$\frac{6}{7}$
Greatly improved........	3	12$\frac{12}{24}$	1	8$\frac{1}{3}$	4	21$\frac{1}{19}$	....	....	4	11$\frac{3}{7}$
Somewhat improved......	2	8$\frac{8}{24}$	2	16$\frac{2}{3}$	2	10$\frac{10}{19}$	2	12$\frac{1}{2}$	4	11$\frac{3}{7}$
Not improved.........	2	8$\frac{8}{24}$	4	33$\frac{1}{3}$	....	....	6	37$\frac{1}{2}$	6	17$\frac{1}{7}$
Made worse......	....	....	3	25	....	....	3	18$\frac{3}{4}$	3	8$\frac{4}{7}$
Survived operation... ...	14	58.4	11	91$\frac{2}{3}$	11	57$\frac{17}{19}$	14	82.4	25	71$\frac{3}{7}$
Died....................	10	41.6	1	8$\frac{1}{3}$	8	42$\frac{2}{5}$	3	17.6	11	28$\frac{4}{7}$
Total................	24	66.6	12	33.4	19	54.4	17	47.2	36	100

The operation seems to have been followed by a less favorable result in cases of ovaritis and ovaralgia with degeneration of the ovaries; 6 deaths, 30 per cent, out of 20 cases; and of the 14, 70 per cent who survived; 9, 45 per cent of the 20 cases, were not improved (3 were made worse, 6 not improved) and only 5, 25 per cent, were improved (2 cured, one greatly improved, 2 somewhat improved).

This is the most important class of cases, as it comprises the largest number, 20, 55.5 per cent, of all the cases operated on, and it is the one in which the operation is most naturally indicated, the ovaries themselves being diseased, and the seat of suffering. The ill success of the operation in these cases is self-evident, if we consider the method of operation resorted to in many and the condition of the pelvic organ; an analysis of these 20 cases will teach a valuable lesson and will lead to more successful results in future.

In cases in which the operation is performed on account of hemorrhage from uterine tumors, menstrual molimina with malformation of the sexual organs or reflex neurosis, the ovaries are, as a rule, neither diseased nor adherent; in the cases now under consideration the ovary is always diseased, generally consisting of a number of small cysts imbedded in the greatly altered stroma; it is bound down by adhesions, if not wholly imbedded in the remnants of an old hematocele or of a pelvic cellulitis.

In each of the 6 fatal cases, 30 per cent, both ovaries were removed; in those which are marked cured, both ovaries were removed; in the 3 improved, one ovary only was removed in two of the cases; the 3 made worse, are all cases of the removal of one ovary; and in the 6 cases not improved, only one ovary was completely removed; in 4 of them, one ovary only was extirpated; and in the other two, the attempt was made to remove both, but did not succeed on account of the adhesions, so that parts of one ovary were left in the pelvis.

The history of the operation in these 20 cases tells us that it is often difficult or impossible to remove both ovaries completely, and yet that both must be removed to secure success.

Next comes the operation to relieve the menstrual molimina in cases of malformation of the sexual organs; 3 cases, with 2 cures and 1 death.

It is hardly necessary to call attention to the comparative success in the cases in which one ovary was removed, and those in which both were removed. The extirpation of both ovaries is, of course, the more dangerous operation, the percentage of death being 38.4 per cent (10 in 26), while in the removal of one ovary, it is only 8.3 per cent (1 in 12); but what is the comparative success? All those who survived the removal of both ovaries were improved with the exception of 2, in whom it was impossible to remove the glands completely on account of the condition of the pelvic viscera, so that practically only one ovary was removed; 7, 30.5 per cent, were completely cured; 3, 13 per cent, greatly improved, 2, 8.7 per cent, somewhat improved; while in the cases in which only one ovary was removed, we find 7, 58.3 per cent, not improved (3 made worse, 4 not improved) and only 4, 33.3 per cent, improved (1 cured, 1 greatly improved, and 2 somewhat improved).

The same comparison may be made between the operations by the abdominal and those by the vaginal section; the vaginal section is evidently somewhat the safer method, but far behind the abdominal in its results; 8 of the 19 patients, 42.1 per cent, operated on by the abdominal section died, while only 3 of the 17 vaginal sections proved fatal; 11, 58 per cent, of the abdominal sections were improved (5 cured, 4 greatly improved, 2 somewhat improved); not a single patient who survived the operation was not improved by it, while the vaginal method gives only 5 cases, 29.4 per cent, improved (3 cured [?] and 2 somewhat improved), but 9, 52.9 per cent, not improved (6 not improved and 3 made worse).

The success of the operation, when performed by the vagina, is very unsatisfactory, and, moreover, the method is unscientific, as it is so very difficult, mostly impossible, to determine the condition of the ovaries, so that we can say beforehand whether the operation can be completed by that route or not. We have 17 cases of vaginal section, 18, if we add case 19 (Sims), in which the operation was attempted by the vagina and abandoned; 6 of these 18 cases, 33.3 per cent, could not be completed; 2 were abandoned (19, Sims and 28, Thomas), which was completed by the abdominal method, and in 4 others (Battey), it was impossible to remove the ovary complete, and the operation was left practically unfinished; this uncertainty, to my mind, is sufficient to condemn the vaginal method.

The analysis of the above 36 cases, and the experience gained in my own operations, lead me to the following conclusions with reference to the indications for the operation, and some general rules to be observed in its performance:

INDICATIONS FOR THE OPERATION.

The operation is indicated only in certain grave cases of chronic uterine or ovarian disease, accompanied by intense suffering or uncontrollable reflex symptoms, in which all means of treatment in the hands of competent physicians have failed, so that the unhappy patient must drag out the miserable existence of a helpless and constantly suffering invalid, if she does not lose her reason or succumb to the tortures of the disease; it may then be undertaken, I., in order to establish the menopause; or, II., to remove the offending organs, frequently for both purposes.

I. *To establish the menopause*, in cases of uterine, ovarian, or reflex suffering dependent upon, or greatly intensified by the menstrual congestion.

(*a. Ovaries not Diseased—Normal Ovariotomy Proper.*)

For this purpose the operation is indicated:

1. By menstrual hystero-neuroses, cerebral, pulmonary, gastric, or other reflex symptoms, associated with and dependent upon the monthly period of pelvic congestion (14, Sims; 35, Engelmann).

2. By dangerous hemorrhage, menorrhagia, or suffering caused by uterine tumors not suitable for removal (29, Trenholme; 21, 22, 23, Hegar; 24, Goodell.

3. By the absence of uterus or vagina, or other malformations of the sexual organs, when accompanied by distressing menstrual molimina (31, Peaslee; 11, Battey; 33, Gilmore).

(*b. Ovaries Diseased.*)

4. By ovarian dysmenorrhea and uterine or ovarian suffering limited to the catamenia, or greatly increased during the menstrual period (12, 25, 28, 34).

II. *To remove the offending organs*, when they are the seat of constant pain, independent of the monthly flow, although generally increased by it; these are cases of chronic ovaritis and ovaralgia with pelvic pain, which are marked by the most fearful and continued suffering, which is only intensified during the catamenia; the ovary itself is always diseased, generally in a state of cystic degeneration, and the object of the operation is not mainly to establish the menopause, but to remove those organs which, by their affection, are causing local suffering, and are involving in disturbance the entire nervous system.

In *ovarian hernia* the healthy ovary may be removed as the offending organ, but this is a class of cases not here to be considered (Koeberle, 38).

GENERAL RULES GOVERNING THE OPERATIONS.

I. *Operate by the abdominal section;* the operation can always be completed and the ovaries removed entire, whatever be the condition of the pelvic organs; a wider scope is given to the fingers and the instruments of the operator than through the vaginal incisions, and in the worst cases, when touch fails, the eye may help.

As a rule, the incision is made in the *linea alba*, but in case the ovaries approach the abdominal walls, and can be distinctly felt beneath them, the incision may be made at any point directly over the ovary; thus in case of hernia or of uterine tumors (23, Hegar). The semilunar incision in the side, which I would term the direct lateral method, is inferior to the median, although in closer proximity to the organ to be reached.

II. *The vaginal operation is admissible only in cases of displacement upon the vagina* (Trenholme, 30). Although the ovaries have been frequently and successfully removed by this method, which is decidedly less dangerous than the abdominal section, it is an uncertainty; almost all those cases in which Battey's operation is indicated, are cases of chronic pelvic suffering, and disease in which we find a pathological condition of those viscera, especially the ovaries, which are generally bound down by adhesions. Dr. Sims says: "If we are sure that there has been no pelvic inflammation, no cellulitis, no hematocele, no adhesion of the ovaries to the neighboring parts, then the operation may be performed by the vagina, but not otherwise."

It seems to me impossible to determine these conditions satisfactorily in all cases, and if we remember that bold and skilled operators and able diagnosticians, such as Marion Sims and T. Gaillard Thomas, have attempted this operation by the vagina and have failed, and that its originator, Robert Battey, had, in four instances, been unable to remove the ovary entire, and was obliged to leave a part of the degenerate and adherent organ in the pelvis, thus subjecting the patient to the dangers of the operation without affording relief, we cannot but consider the success of a vaginal operation as a piece of good luck.

The operator who seeks to remove the ovaries by this method must be very positive in his diagnosis, or he must trust in Providence for a favorable condition of the pelvic viscera.

III. *Remove both ovaries.* The removal of one ovary may almost be said to be needlessly subjecting the patient to the dangers of the operation, even if that one ovary is the seat of pain, and if that one ovary only is diseased; two successful cases are known in which complete relief followed the removal of one ovary (13, Sims', 32, Sabine), but generally we find the disease recurring in the other ovary, even if temporary amelioration be obtained. Dr. Sims justly says that Battey's operations and his own would have presented very different results if they had not departed from the theory which Dr. Battey laid down in the very beginning, viz., to bring about a change of life by extirpating both ovaries.

In the cases of ovarian hernia, the prolapsed ovary is removed, one or both as the case may be, and the incision is made directly over the disturbing organ.

The operation, if properly completed, so that no remnants of ovarian tissue are left in the pelvis, is more difficult and more dangerous than has been generally represented. However great the dangers, experience will lessen them, and sufficiently favorable results have already been achieved, so that we may look hopefully to Battey's operation as a last, a desperate, but not unpromising resort in those distressing cases of female suffering dependent upon ovarian disease or menstrual congestion, which all treatment has failed to relieve.

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[1] This, the latest and most complete article on the subject, reached me when my paper had already gone to press, too late to make more than this short mention of it.

ON THE EFFECT OF ATROPINE IN DIMINISHING THE PAINS AND SHORTENING THE DURATION OF THE FIRST STAGE OF LABOR.

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(With one wood-cut.)

I CONFINE my remarks mainly to a consideration of the first stage of labor, with special reference to the use of atropine during that period—a period trying alike to patient and physician, as all who have had experience in obstetrics can testify. Only within a comparatively recent period have physicians regarded the pain and suffering experienced by the human female during labor otherwise than as a necessary accompaniment of that process, and, as a consequence, they formerly abstained from any interference with it, either medicinally or mechanically, except in very rare cases. Even in such cases, assistance was not rendered, in many instances, until the system had given strong evidences of its inability to perform the allotted task, and had manifested unmistakable symptoms of danger—in short, had given every proof of its powerlessness to bring about relief unaided. That it may not be thought I am using language stronger than the facts warrant, I refer to a few authors who were for many years considered the most eminent authorities in obstetrics, also to the rules laid down by them, indicating the use of the forceps in the second stage of labor, which may give you some conception of the nature of the assistance they rendered their patients in the first stage.

Dr. Osbourne says, " In the state indicating the use of the forceps, *all the powers of nature are exhausted*, all capacity for further exertion is at an end, and the mind as much depressed as the body ; they would both together sink under the influence of such continued and unavailing struggles."

Dr. Collins did not think it right to interfere as long as the head advances ever so slowly, unless the child be dead.

Dr. Denman enjoins us to wait at least six hours, with the head of the child stationary in a position favorable for the use of the forceps, before the instrument is applied.

Dr. Gooch would extend this period of suffering to twelve hours.

When such rules were acted on and strictly followed as to the assistance to be rendered during the second stage, what must have been the practice as to the assistance to be rendered in the first?

Dr. Gooch, the author last quoted, in speaking of retarded labor in the first stage, from irregular pains and rigid cervix, uses this remarkable language: "I am tired of giving opium in these cases; my remedy is *tincture of time*, the loss of which is the only thing to be regretted, for it, at least, produces no additional evils. You must keep up the spirits and confidence of the patient and her friends. A female companion who has herself had a half dozen tight labors, and who can tell stories of friends who have been a week in labor and have done well at last, will be a good assistant to you." Yet if we follow him further, we find that he did not trust entirely to this somewhat marvellous tincture, for he says, "In slight cases, where the cervical portion of the uterus is thick, hard, gristly, hot and painful, as if in a state of subacute inflammation, and the dilatation proceeds very slowly, and the os uteri to the touch, instead of conveying the sensation of an orifice in a piece of broadcloth, feels like an orifice in an inch deal board, warm salt-water injections are of great service, relieving, as by fomentation, the sub-inflammatory state of the cervix uteri."

Dr. Byford, writing as late as 1870, says: "If we wait, it will be overcome by the pressure of the uterine contractions generally, and as it is to be overcome by *force alone*, we are justified in greatly aiding the uterus with the fingers; the fingers may be introduced, and the anterior lip of the os pressed up towards the symphysis pubis, and retained in that position, while the uterus affects the posterior part of the cervix."

Now, I do not object to this manual assistance in such cases, but do object to the time which he selects for rendering such assistance, viz.: during the uterine effort, when the cervical fibres are in a state of extreme tonic contraction. I hold that it should be rendered at a time when the whole uterus is in a state of repose. Would the surgeon, if about to reduce a dislocated limb, select a time when all the muscles connected with the structure of the dislocated joint were in a state of tonic contraction?

Dr. Leishman, in his System of Midwifery, published in 1875, referring to the first stage of labor, says: "Even in cases when its duration is prolonged far beyond the average, this, of itself, is no excuse for interference, unless the general symptoms indicate that it is our duty to accelerate the labor by such means as are within our reach—a state of matters which is of rare occurrence."

I am persuaded that the belief that the pangs of labor are simply manifestations of a perfectly normal physiological process in which art has no right to interfere, prompted Dr. Blundell to make use of the expression, "meddlesome midwifery is bad midwifery,"—an expression that yet finds a place in many of our text-books on obstetrics—and which expression, in my humble opinion, has served as a shield for no inconsiderable amount of timidity and incompetency, and condemned many a sufferer to long hours of the most severe and needless torture. I say needless, because I believe that a large proportion of it can be relieved, and that it is clearly within the province of medicine to effect such relief. In speaking thus strongly, I would not have you infer that I do not respect the authorities in this department; on the contrary, I yield to no man in my respect for them. True, I do not look upon their opinions as being so many hempen cords to bind me, but rather as so many silken threads to indicate to me the route travelled by others along the many winding labyrinths of the science of medicine. For the history of this science furnishes us with numerous instances of the most lamentable results of a blind subservience to authority—a subservience resembling nothing so much as the abject docility of a sightless horse in his measured tread along the beaten track around a bark mill.

I claim that it is the duty of the obstetrician to alleviate and shorten, if possible, the pains of labor, at whatever stage it may be; provided always that he can do so with perfect safety to both mother and child. I hold also that an intelligent interference, if you choose to call it such—I prefer to call it intelligent assistance—is not *meddling* with labor by any means. Meddling means, when applied to the subject under consideration, an interference with the process of labor when it is all right and needs only to be left to itself, or, in other words, meddling with labor is the being officiously intrusive upon its efforts or operations at a time when it is doing its own work well, and is giving strong proof that it is fully able to accomplish its own task within a period of time that will guarantee, not only the delivery of a living child from a living mother, but also that the child will be in a condition to live, and that the mother will be uninjured as well as alive. For the obstetrician to interfere with the harmonious action of these natural forces, in a natural labor, where he should, as it were, stand only in amazement at the grand triumphs often achieved by these unaided and irrational powers, is simply to be stepping beyond his legitimate province. No one, in such instances, would be justified in resorting to other than the expectant treatment. But, in a given case of labor, though it has terminated favorably, in a given time and with a given amount of pain, yet could a better or more skilful management have effected the same favorable result with one pang less, or one long moment of suffering avoided, then the attendant is responsible for that useless pain, that additional moment of torture. The great diversity of opinion on the question of rendering assistance in the first stage of labor, as well as on the question of the application of the forceps in the second stage, arises from the fact that there is a boundary line between the physiological and pathological territories, and this line varies so much in its course between these different domains that, to a certain extent, its location must long remain in dispute. It is with reference to the neutral ground, as it were, along this line, that authorities differ so widely. In my judgment, questions of this nature cannot be set at rest by any arbitrary rule: they must be determined by the physician himself in and for each individual case, taking all the facts before him.

One high in authority in the past holds strongly to the doctrine of non-interference in the first stage of labor, and characterizes all such efforts as are herein alluded to, as "meddlesome interference," and as pernicious practice. It is to be presumed, however, that where there were strongly marked pathological conditions, such as a pathological or anatomical rigidity of the cervix, he would sanction even an incision of that structure; yet that would modify to but a limited extent the position which he takes on the side of non-interference. He could not have sat hour after hour at the bedside of a patient writhing under the pangs of labor in the first stage, with the expulsive and resisting forces in fierce conflict—the advantage now with the one, now with the other, but, on the average, in favor of the latter—without having his early impressions of the exquisite arrangements of nature for the accomplishment of certain ends, and her marvellous adaptation to almost every emergency, rudely shocked at times. All of us, I believe, have the same exalted estimate of nature's wonderful mechanism, and are frequently astonished at her workings in the process of natural parturition; yet occasionally we see her battling with conditions which, unaided, she is totally unable to overcome, as, for instance, when she is met, at the outset, by an obstinately rebellious cervix. Who of us, under such circumstances, has not been thankful that the science of medicine has placed at our disposal both the medicinal and mechanical means to teach her prudence at least, if not a lesson?

Having thus briefly, and it may be, too strongly, stated some of my views in reference to rendering assistance in labor, I will, for a moment, call attention to the anatomy and physiology of its first stage. This is said to commence with the beginning of the regular uterine efforts, and to end with the complete dilatation of the cervix. Yet there is another and antecedent stage which has been called by some writers the painless or insensible stage of labor, in contradistinction to the painful or sensible stage that is soon to follow. This usually painless stage commences from eight to fourteen days prior to the beginning of what we call the first stage. A description of this preparatory stage is best given in the language of Cazeaux: "In the last fortnight the internal orifice softens, and yields to distention, then expands from above, so that the upper half of the neck gradually becomes confounded with the cavity of the body: the lower part of the ovum will, evidently, engage in the dilated portion, and soon comes in contact with the parts in the neighborhood of the external orifice. This contact occasions a progressive irritation of the nerve-fibres of the lower half of the cervix, which, by reacting upon the body, excites its contractions, until finally, the entire neck being effaced, the irritation reaches its maximum, and labor commences."

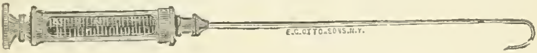
The phenomena manifested in the first stage of labor relate almost wholly to the obliteration of the external os, and its distention to such a degree as to admit of the passage of the fetus from the cavity of the uterus above into the vagina below. The sufferings experienced by the female during this stage are of a marked and peculiar character, and are borne by her with less patience and much less fortitude than those of the second stage. She seems instinctively to dread the former, for the reason, I presume, that she imagines she is not accomplishing any desired results, or getting any nearer her final delivery. Those of you who have watched closely the cries and movements of a female in labor, will probably remember that, while the first stage impressed you particularly as one of pain and suffering, the second gave you as strong an impression that it was one of exertion and work. You will also remember that any attempt at an examination during the first stage is, in the majority of cases, productive of additional suffering from which the patient shrinks, and that she pleads for something to relieve her of what she considers needless pain.

I believe that it is a well-known fact that there is a marked difference in the amount of pain endured during parturition, between individuals belonging to savage tribes, and those belonging to the civilized races, and that this difference becomes more apparent if we select for our comparison the more highly civilized among the latter. In the latter we find not only much less muscular power, in the uterus as well as in other parts, but we also have to deal with systems which, by means of false habits of life, are less adapted to endure pain. And it is not alone the results of these false habits with which the obstetrician has to contend. One other element, which frequently taxes the resources of his art to the utmost, is the mental condition which is often the legitimate attendant upon the leading of a so-called fashionable life. The dilatation of the cervix is not simply a mechanical stretching, brought about wholly by the action of the longitudinal fibres of the uterus acting on and over the inclosed fetus, the presenting parts of which they are mechanically forcing through the circular fibres of the cervix, but there is also a physiological process taking place, especially in all perfectly normal and easy labors. This process consists in a general infiltration of a serous fluid into its muscular structure, softening and separating its fibres to such a degree as to make them pliable and easily distensible by only a fair amount of effort on the part of the longitudinal fibres. Now it may be easily conceived how a weak muscular tone, such as that which frequently obtains under a high state of civilization, together with a nervous system sensitive to pain by so much the more as the mental condition lacks will force, would present us with a case departing widely from the normal type of labor. Nor is it all surprising that, under such conditions, we have to encounter a rigidity of the cervix of the spastic variety which, by the way, I believe to be far more frequent than the two other varieties combined. This variety I regard as arising particularly from an excessively sensitive condition of the inner walls of the cervix, producing such an intense degree of pain as to embarrass greatly the strong rhythmical action of the expelling fibres, and which condition, if left to itself, must inevitably condemn the patient to suffer on, until the resisting force slowly succumbs to the expelling, and allows the labor to pass on to the second stage.

Some two years ago, I had under my care a patient suffering from a most severe form of prolapsus ani, which had resisted all the usual treatment Her condition, at the time she came under my charge, was pitiable indeed. She was obliged to remain constantly in a recumbent position, and even in this position the bowels did not always remain in place. After trying a few astringents, anodynes, etc., without avail, I injected, hypodermically, one-sixtieth of a grain of strychnia into the structure of the sphincter ani. This, followed daily for about two weeks, so far relieved her that she has not since been troubled with the distressing malady to any considerable extent.

Strychnia having acted so well as a tonic agent to that muscle, I decided to try atropine upon the same muscle, where an antispastic effect was the object to be attained, and for this purpose selected a case of swollen strangulated hemorrhoids occurring after parturition. The use of it in the afore-mentioned condition was so satisfactory that I now always resort to it in severe cases of that nature. The hypodermic use of atropine having resulted so favorably in relieving the spasmodic action of the sphincter ani, I determined to try an injection of it into the substance of the cervix during the first stage of labor, when labor was delayed in consequence of a rigidity of that structure, of the spastic variety.

The first step towards carrying my design into effect, was to procure a suitable syringe and needle. This, which is shown herewith, I had made, and for it I am indebted to the skill of Messrs. Otto & Sons, of New York City.


E.C.OTTO&SONS.N.Y.

Case I.—The first case in which I had an opportunity to make practical application was that of Mrs. O——, primipara, aged 42. Saw her first in the afternoon of November 18th, 1877. From the marked irregularity of the pains, both in frequency and force, I diagnosed what are termed "false pains," and accordingly gave morphia—learned the next morning that she had passed a moderately comfortable night, though not entirely free from pain. An examination at this time disclosed a hard, undilated, and apparently unyielding os—ordered more morphia, but when I left was not without some misgivings as to the future of the case. Early in the evening of same day visited the patient again, and found her about the same as when I left, excepting that the pains had now become somewhat more regular in their occurrence, and of greater duration and force. An examination showed that the os was still but little disposed to relax its grasp in front of the vertex of the fetus, which could be felt pressing firmly against its inner surface. Now, that I might possibly assist the uterus in its task, I injected into the structure of the cervix, by the needle, about one-fiftieth of a grain of atropine. I proceeded as follows: After hooking the anterior lip of the cervix with the index finger of the right hand, and drawing it slightly forwards, I carried the needle along the palmar surface, keeping the point pressed quite firmly against it, so as to avoid wounding the maternal parts. After carrying its point well within the cervix, I raised it from the finger, and, by a slight traction, buried it somewhat deeply into the muscular structure of that portion of the uterus. After discharging its contents, I retained it in that position a few moments, in order that the absorption of the atropine might be certain to take place, as, without taking such precaution, I should not have been certain but that it was washed away by the flowing of the blood caused by the puncture of the needle. Having patients in the immediate neighborhood, and supposing I should have ample time, I visited them, but was surprised, on my return after an absence of only ninety minutes, to find the child not only born, but washed as well. After giving the patient one drachm of fluid extract of ergot, I removed the placenta without difficulty, and without the slightest evidence of uterine inertia or hemorrhage. The child was probably a little below the average in weight, but well, and showed no symptoms of having been affected by the belladonna.

CASE II.—Mrs. S——, aged 33, sixth child. The history of this case is, in short, one of placenta prævia. A diagnosis had been made three months previous, since which time she had had repeated, but not very alarming, hemorrhages. Because of there being no hemorrhage, and it being night-time, it was eight hours subsequent to the commencement of labor pains before I was summoned. She thought that, as these pains were not, at first, any more severe than others she had experienced in the course of the preceding months, they would probably pass away, as those had done, or that, at least, she could wait until morning. At the time of my visit, which was November 20th, 1877, the uterine efforts were feeble, but occurred at regular intervals. An examination showed that the os was dilated to about one and a half inches in diameter, but evinced no great tendency to yield to the weak efforts made by the uterus. The margin of the placenta could be distinctly felt on the right side of the uterus, but was high enough up to lead me to expect a favorable result. I now injected into the substance of the cervix one-fortieth of a grain of atropine, then at once ruptured the membranes, and applied a moderately tight bandage in order to hold firmly and continuously the vertex of the fetus against the inner wall of the cervix, and lessen as much as possible the risk from hemorrhage, which might occur at any moment during the process of dilatation of the cervix. About four strong efforts of the uterus now followed in rather quick succession, during the last of which the os appeared to offer no further resistance, and the head of the child cleared it at once, and settled into the excavation. One drachm of ergot was now given, and the uterus was firmly compressed by the hand during its succeeding efforts, at the third of which a full-sized and healthy child was expelled. The uterus, still under the pressure of the hand, in a few moments surrendered its misplaced placenta. This was followed by only a moderate hemorrhage. I found the patient next morning with the pupils dilated, and complaining of a dry throat and dimness of vision, which, I assured her, would speedily disappear.

CASE III.—Mrs. E. M., aged 24; primipara. Saw her first Dec. 15th, 1877, at 10.30 A.M.; learned that she had been in more or less pain for eight and a half hours. The pains, at that time, had a periodicity of about eight minutes. An examination showed that the os would readily admit the entrance of the index finger between each of the efforts, but that, during an effort, it became hard and resisted its introduction. It was plainly a case of spastic rigidity of the cervix. Three hours after, although it had yielded a little, it still retained enough of its spastic character to lead me to expect a long and tedious first stage, at least. After waiting two hours more, there being no very marked change in the condition of the cervix, and the patient being pretty thoroughly wearied with her thirteen and a half hours of pain, I injected one-fortieth of a grain of atropine. Returning in forty minutes from another call, I found that the os had lost its spastic condition, also that the uterine effort was much greater. I now ruptured the membranes, after which I was able to diagnose the position of the vertex, which was that of R. O. A. From this time the labor progressed so rapidly, that a healthy female child was born in ninety-five minutes.

One drachm of ergot was then given, and placenta removed. No symptoms of uterine inertia appeared.

Case IV.—Mrs. C. H., aged 21, primipara, taken with labor pains at 1.30 A.M., Dec. 22d, 1877. Saw her at 8 A.M.; pains were short, sharp, and recurring at rather long intervals. Examination disclosed that the os would readily admit the point of the finger during repose of the uterus, but that, while the latter was in its active stage, it seemingly partook of the general contraction going on within the body of that organ, and then at once became firm and unyielding. At ten o'clock, dilatation nad taken place to the extent of about one inch in diameter, but there was still rigidity during each uterine effort. Judging that the os was offering too great resistance for the weak efforts of the uterus to overcome in a reasonable time, I injected $\frac{1}{40}$ of a grain of atropine. In twenty minutes, the pain had become much greater in force, and in ten minutes more, dilatation was so far complete as to warrant me in rupturing the membranes. This gave exit to only a small amount of fluid. The head, which was found to be in the R. O. I. position, slowly engaged in the superior strait, and reached the cavity of the sacrum at about 12 M. I now gave, though somewhat reluctantly, one-half teaspoonful of ergot, which did not, however, produce any appreciable effect. At 1 P.M., the head was slowly approaching the inferior strait, with the pain lessening in force. The patient being weary, begged me to relieve her, to which reasonable request I assented; but, not wishing to evoke a power which I could not control, I applied the forceps instead of giving ergot. In fifteen minutes, a strong and healthy child claimed our companionship. I could not discover that the pupils of the child were in the least disturbed by the atropine, though the mother, for a time, complained of a dry throat and dimness of vision.

Case V.—Mrs. L. M., aged 27, primipara. With the exception of occasional attacks of neuralgia, she had always enjoyed good health. Was called to see her in the afternoon of January 12th, 1878. According to a previous calculation of mine, she yet lacked twenty-eight days of being at full term. Found her suffering considerably from pain which I diagnosed as neuralgia, and gave morphia. A digital examination of the cervix showed that there was a strong probability that my calculation as to her time was erroneous, and that she was then near her full period, and that the pains of labor would shortly claim her attention instead of the neuralgia from which she was then suffering. As she had not slept for about twenty-four hours, I prescribed $\frac{1}{12}$ grain of morphia, combined with three drops of tincture of gelseminum—the latter to obviate the nausea that, at times, follows the use of an opiate—the dose to be repeated hourly, until she was relieved. She passed a moderately comfortable night, and by next morning was entirely free from pain. At eleven o'clock that evening, I saw her, pursuant to a summons, and learned that, at 5 o'clock that afternoon, the waters came away, unattended by any positive pain, however; also, that she did not have any pain until nine o'clock, at which time well-marked labor pains commenced. An examination showed that the os was hard, unyielding, and undilated, and its rim almost cord-like during the action of the uterus. I soon ascertained that there was a considerable quantity of amniotic fluid yet to escape. During the repose of the uterus, at which time the os was most pliable, I cautiously elevated the head of the child, and allowed the water slowly to escape; being careful, however, not to elevate the head so far as to allow a loop of the cord to slip under it. At fifteen minutes past eleven, I injected $\frac{1}{40}$ of a grain of atropine into the tissue of the cervix. In a few moments, the pains increased in force and duration. In forty-five minutes, dilatation was complete, the head cleared the cervix, and engaged in the superior strait, then slowly descended into the excavation. The patient now became very nervous, and, knowing that she could be relieved by the forceps, begged me to apply them. This I did, and by a very slight traction during each pain, the head soon rested upon the perineum, and began to distend the vulva, at which point, as is my invariable custom, I removed the instrument. In a few minutes, the child was born, and in just one hour and forty-five minutes from the time I injected the atropine. The child cried lustily, and manifested not the least symptoms of having been in such close proximity to a part which had had injected into it a maximum dose of atropine. The mother complained of a dry throat, and the pupils were dilated. Slight hallucinations continued for about a day.

Case VI.—Mrs. W., aged 22, primipara. Below the average in stature, but well formed. Saw her Jan. 21st, 1878, at 10 A.M. She had been in labor twelve hours, during the last four of which it had been quite severe. An examination disclosed that the os was dilated to the diameter of just one and a quarter inches, and had a hard, cord-like rim during each pain, which was only moderate in force. I at once injected $\frac{1}{40}$ of a grain of atropine, which, in this case also, had the effect apparently to increase the force of the uterus, and also to so thoroughly and efficiently overcome the spastic action of the circular fibres that full dilatation was accomplished in forty minutes. I then ruptured the membranes and diagnosed an L. O. I. position of the vertex, which slowly descended into the excavation. Being quite satisfied that nature, if unaided, would prove unable to complete the labor within a limit of time which would be safe for both mother and child, I applied the forceps, and brought the head to the inferior strait, from which point nature completed the delivery. Mother and child both did well, and neither manifested any symptoms of having absorbed any atropine.

CASE VII.—Mrs. J. A., aged 36; tall, thin, pale, and delicate. Had suffered for six years from occasional attacks of asthma of the most severe form, for the relief of which she had sought every known remedy, including continental travel; had one labor previous to the present one, which occurred twelve years before, at which time she came very near losing her life from post-partum hemorrhage. About the period when the asthma commenced, I found there was a retroversion and descent of the uterus, which added much to her general distress, until relieved by a properly adjusted soft-rubber pessary. Two years ago last winter, she came near dying from double pneumonia, from the shock of which she did not fully recover until the present pregnancy began, the influence of which upon her system was such as to effect almost a renewal of life. From certain circumstances attending this case, it could be definitely ascertained that the conception could not have occurred after the 25th day of June, 1877; consequently, the period of gestation was protracted ten days beyond the usual period, delivery having taken place on the 10th day of April, 1878. For two weeks prior to the 280th day, she suffered from pressure much more than is usual. On the evening of April 7th, her husband called and stated that she was losing the cheerfulnes and hopefulness which she had always exhibited in a marked degree during illness, and was giving way to despondency and forebodings. I told him I had no doubt this was caused by the fact that the pregnancy had exceeded the allotted period, and that the only reason I could assign for such excess was that the uterus had become distended beyond its contractile power, and that about the only thing which could be done was to assist the uterus in its feeble efforts. At 12 M., on the 8th of April, on examination, I found the uterus, or rather the cervical portion of it, the same as it had been for several days, to wit: the os firmly closed by a rather hard and unyielding rim that would not permit even the point of the index-finger to pass. The internal os was wholly obliterated, as the vertex of the child could be felt lying firmly pressed against the internal surface of the external os. I now injected one-fortieth of a grain of atropine into the structure of the cervix, but with considerable difficulty, on account of the os being so firmly closed, which prevented me from performing the operation with the precision I desired. Saw the patient two and a half hours after; found the os so much less resistant that it required but slight force to pass the index-finger; there was no uterine effort. At 6 P.M., the os being about as at the previous call, I injected, this time easily, $\frac{1}{40}$ of a grain of atropine. At the same time, using the needle as a tenaculum, I drew the os, which was still moderately high up, downwards and forwards, and held it in that position by the needle, while with the index finger I swept around the inner surface of the cervix, between it and the membranes, freeing the latter from the former, as high up as possible to reach. At 10 P.M., found the pupils markedly dilated, and the patient complaining of a very dry throat; the os admitted two fingers readily; the membranes were still intact. The position of the vertex could now be determined, which was R. O. I. No effort at contraction was manifested by the uterus. My first suspicion as to the cause of delay in this case was now shown to be a certainty, namely, that it was due to a too wide distention of the uterine walls. Feeling that still further delay could, at most, only result in the loss of a little more of Dr. Gooch's "tincture of time," I decided to wait until morning, at least. At 10 A.M. of the 9th, I found the os quite easily dilatable, but with no effort, as yet, on the part of the uterus. At 8 P.M., there was no change, except that the os was still more soft and dilatable, with an occasional slight uterine effort. As the patient was not suffering so much as to prevent her from obtaining a reasonable amount of sleep, and as I was myself greatly in need of the "chief nourisher in life's feast," I decided to leave the membranes as they were, and wait again until morning. I was, however, sent for, and saw the patient again at 3 A.M., April 10th, just thirty-nine hours after the first injection. I learned that affairs remained unchanged until midnight, but at that time the pressure had begun to increase, and had continued so to do, moderately, up to the time of my call. The reason the patient gave for not sending for me before was that she had been waiting for pains to come on. A examination showed the condition to be about the same, excepting that the uterus was now making regular and well-marked efforts, during which the membranes were tense, but manifested not in the slightest the form of a "dilating wedge." Seizing an opportunity, at the close of one of these efforts, I ruptured the membranes, and relieved the uterus of the greater portion of its amniotic contents. From this time onwards, the labor progressed actively, and, in fact, about the only obstacle it encountered was from the great elongation of the cervix, the tissue of which seemed to be hardly sufficient in quantity to permit its distending to such extent as would allow the child to pass. The child proved to be a male, weighing 8¾ pounds. At no time was there any of that sharp, cervical pain which adds so greatly to the suffering of a patient, although the cervix was so thinned that it was like a piece of parchment to the touch. Soon, however, the head cleared and descended to the floor of the pelvis. I now gave one drachm of fluid ergot, to guard against a repetition of what occurred in her former labor. In a few moments after, at 4.45 A.M., the child was born. There was no uterine inertia, and the child was not in the least affected by the atropine.

The following case, though not strictly illustrative of the topic of this essay, inasmuch as it is an instance of the so-called hour-glass contraction occurring during the second stage of labor, is yet entitled to insertion by reason of its close approximation to the foregoing cases, both in its nature and the means adopted for relief. So far as my examination shows, none of the systematic treatises on obstetrics satisfactorily discuss cases of this kind, and the young practitioner might long remain in ignorance of complications of this nature, which, as I believe, are of much more frequent occurrence than is supposed, and which are not seldom incorrectly diagnosed :

Case VIII.—Mrs. G. H , aged 27, third labor. Was called to see her at 9 P.M., April 27th, 1878 ; both her previous labors were much less painful and shorter than the average ; learned that she had been in pain since 12 M., but that during the past two hours only had it been strongly marked. The action of the uterus differed from a perfectly normal action in respect only that its efforts were short and sharp, and the intervals of repose were irregular in duration. The efforts were abrupt, reaching their highest pitch of intensity at once, and subsiding as quickly. An examination showed that there was a most profuse, glairy discharge, that the os was high up and dilated to about two inches, and freely dilatable. The patient had passed one month beyond her own reckoning, and, as is usual, had become nervous about herself, and to this nervousness I attribute the apparently slight deviation in the action of the uterus from the normal type, above referred to, and supposed this would be rectified as soon as the labor had gotten fully under way. I therefore ruptured the membranes and allowed the vertex to impinge upon the inner surface of the cervix. I was confident that the labor would prove to be short and easy, and unqualifiedly, though perhaps unwisely, expressed that opinion, but I was doomed to disappointment. Notwithstanding the apparently strong efforts of the uterus, the roomy nature of the pelvis, the copious discharge, the non-resistance of the cervix, and the favorable position of the presenting part, it being R. O. I., the labor did not progress, the head did not enter well within the pelvic brim and remain there. So far as I could ascertain, the muscles of the uterus were acting with reasonable energy and a fair amount of co-ordination, although I was hindered somewhat in my examination by the great quantity of adipose tissue contained in the structure of the abdominal parietes ; but notwithstanding these favorable conditions and numerous changes of position and form and persistent pressure over the fundus of the uterus in the direction of the axes of the superior strait. the labor remained the same until about 2 P.M. I was now convinced that some unusual cause, other than the slight irregularity above mentioned, retarded delivery. I accordingly passed my hand into the vagina and grasped the head, which, on examination, I found to be freely movable circularly around the pelvic brim during the repose of the uterus, as if attached by an ordinary swivel hook. Watching my opportunity, I gently passed the fingers along over the globe of the head, and between it and the anterior wall of the cervix uteri, and carried them fully up to the neck of the child, where I found a circular uterine band, so firm to the touch that it resembled nothing so much as the unyielding cervix so often met with at the beginning of labor. The entire body of the child, except the head and a small portion of the neck, lay wholly beyond this tetanically contracted ring at the lower segment of the uterus, and which was, without a doubt, composed wholly of the tissue of the uterus of that point. The posterior lip of the cervix was so infiltrated with serum as to be greatly thickened and elongated, and it hung pendulous in the vagina. The anterior lip was in a similar condition, but only to a limited extent. Knowing that delay would only aggravate the case, and cause no inconsiderable danger to mother and child — to the mother from exhaustion, inflammation, and further infiltration and probable sloughing of the cervix, and to the child from compression—I injected into the anterior lip of the cervix $\frac{1}{40}$ of a grain of atropine, combined with $\frac{1}{7}$ of a grain of morphine. Probably, under the conditions, if a more distant point had been selected for the injection, it would have answered the purpose as well. The only thing worthy of note at first was the length of time which elapsed before the compound took effect. This I attributed to the almost pathological condition of the structure into which the injection was made. In about one hour, however, the patient gave evidence of its operation. There was dryness of the throat, dizziness, an almost complete subsidence of effort on the part of the uterus, and tendency to sleep. This latter, however, I attributed rather to exhaustion. On another examination now made, in the same manner as the former, I found there was a total absence of the constricting circular band. On the contrary, the uterine cavity and vagina together formed one continuous canal, at the upper or blind extremity of which the child was closely packed. I introduced my short forceps, turned the patient upon her left side and firmly flexed the thighs, after which I seated myself in a position somewhat facing the perineum, and properly adjusted and locked the forceps in the fronto-mastoid diameter. After giving a full dose of ergot, and gently kneading the fundus uteri for a short time, a moderate expulsive force was manifested, which I aided by moderate and persistent tractile force upon the forceps, which did not amount to what might be called pulling. This caused the head to rest upon and distend the perineum in a short time, at which point that valuable auxiliary to labor, reflex action, came to my assistance, and before I could remove the second blade of the instrument, a large and healthy male child was born. Both mother and child did well.

From the cases just stated, we must necessarily draw one of two conclusions—either, first, that the atropine had a most markedly beneficial effect, or, second, that they were just so many cases of coincidences. I have said nothing, as may have been noticed, about other forms of rigidity; namely, the pathological and anatomical. This is for the reason that I have not as yet had opportunity to apply this treatment in such cases.

In the former variety, I cannot conceive how the treatment herein described could be of any service, except that it might deaden that sharp, cutting pain which necessarily accompanies such a condition, and which, if unrelieved, produces the same effect as is observed in a case of spastic rigidity; that is, it embarrasses the efforts of the uterus so much as to render its expulsive force nearly or quite unavailing. In the anatomical variety it might be of service by acting on and relieving any spastic element which might be present as a concomitant.

It is claimed by some writers that a rigidity of the cervix will generally be found attendant upon an insufficient uterine force, and a consequence of it. My own impression is, that this is an error, and that a more reasonable supposition is, that the cervix becomes spastically rigid, because inordinately sensitive to the pressure within, which pressure causes pain so acute as to shock the entire nervous system to such a degree that the expulsive force of the uterus is greatly embarrassed, and that thus weak pains are found to result, indirectly, from an over-sensitive cervix. If this be so, it is obvious that, if we subdue the irritability of that structure, and lessen that severe pain which embarrasses the action of the uterus at this stage of labor as quickly and effectually as a severe cramp in the limb would interfere with the second stage of labor, we shall then restore the equilibrium of the nervous system, and the nervous force will become properly distributed; the spastic rigidity will disappear, and the body of the uterus will act at suitable intervals of time, and with a due degree of force.

This oversensitive condition of the cervix, under such circumstances, appears to be a wise provision of nature; for let us suppose that the expulsive force was not in the least affected by this sensitive condition of the cervix, and should drive the fetus through it regardless of its spastic character? How many more than at present should we have of cases where the thin and delicate lining of the cervix would be lacerated to such an extent as to cause the latter to be hypertrophied, raw, and angry, and remain pouting through a torn and ragged os—a condition in which it might remain for months, or even years, and which, if unrelieved, would condemn the sufferer to lifelong invalidism.

Let us suppose that, in a given case of labor, the expulsive force is twenty pounds, and the resisting force precisely the same. It would not require that the physician should be endowed with any great amount of prevision to enable him to foretell what the result would be, so long as these forces continued in the same relative proportion. It certainly would not be good practice for him to seek to augment the expelling power, if sound judgment would sanction an effort to lessen the resisting power. It is obvious that, if he could succeed in lessening it by ten pounds, it would be equivalent to doubling the expelling force.

I have said nothing about mechanical dilators, and the use of anodynes and anesthetics, for the reason that all are well acquainted with their use, in cases where indicated. There is, however, one other remedy often resorted to in cases of rigidity of the cervix, to which I wish to call attention more particularly. If refer to the hot douche. This, as is well-known, is used to accomplish the same end in case of rigidity in labor at term, as when used to bring on premature labor—that is, to soften and render more or less pliable and distensible the cervical ring. But we also know that, before such a condition can be brought about, more or less fluid of a greater density than water must be effused or infiltrated into its connective tissue, and the muscular fibres of which that structure is so largely constituted must be separated to a certain extent. I think that keeping a structure like that of the cervix for a long time in immediate contact with pure water, at a temperature higher than that of the body, would necessarily set up more or less exosmotic action. If so, the effect would be the reverse of that of pliability and distensibility. To use a strong comparison, it would bring about a condition like that of the washerwoman's fingers, after she has been a whole day at the tubs.

It is stated by many authorities upon obstetrics at the present time, I believe, that even if labor in the first stage be considerably prolonged, no great danger is to be apprehended. This is true only so far as the *immediate* effects upon the mother are concerned; but the exhaustion of muscular contractility during the first stage may be so great, by reason of such prolongation, as to render mechanical assistance absolutely essential for the completion of the second stage. Again, a muscular structure that has been overtaxed, allowing it to have been overtaxed by time and not by force, is, as is generally known, more susceptible to inflammatory action, and, in the case of the uterus, which has to undergo such an important change after parturition, it is found that, in addition to a susceptibility to inflammation, it is not, after unduly prolonged efforts, in a condition favorable for such change.

I have presented herewith the results of my labors towards the attainment of what has been to me a long-sought object, viz., the abbreviation and diminution of the pains of labor in its first stage. How far I have been successful, or how far my suggestions will be found worthy of approval, time and experience will determine.

ACUTE FATTY DEGENERATION OF THE NEW-BORN.

BY
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THE following case offers, we believe, an interesting illustration of a recognized, but still rare and not completely understood disease.

Early in the past year, Mrs. H. asked my advice under the following circumstances: She had been married twelve years, and her eldest and her only surviving child was then eleven years old. I have forgotten the fate of the second child. The third was born prematurely at seven months, and died within twenty-four hours after birth. The fourth was apparently healthy for three or four days, then began to have hemorrhages from the navel which resisted the application of iron styptics, and to whose repetition the child finally succumbed on the eighth day after birth. The fifth child was born dead at term—a week after the cessation of all movements. During this fifth pregnancy, Mrs. H.'s health, which previously had been irreproachable, had suffered a good deal, and she had noticed that her abdomen remained much smaller than in former pregnancies. The child at birth was said to have been very small, but no exact measurements were taken. After this confinement, Mrs. H. recovered her health completely. At no time, so far as could be ascertained by the history, did she present symptoms of endometritis, still less of syphilis. After the misfortune of the fifth confinement, she was advised, by a well-known German physician of this city, that, in the event of another pregnancy, she should watch the movements of the child carefully, and should they, near term, begin to grow weaker, that she should at once report the case to a physician, who might save the child by bringing on a premature confinement.

It was for precisely this exigency that Mrs. H. consulted me. About a year after the fifth confinement, she again became pregnant, and was now two weeks before term. During the period of gestation her health had been uninterruptedly good, and the movements of the child vigorous, until a few days previous, when they had begun to grow much weaker, and, warned by her previous experience, she was fearful that they might soon cease altogether.

Upon examination I found the child apparently well-developed, the head presenting in the first position, the amniotic liquor in sufficient abundance, but not excess. The uterine souffle was loud and distinct, but the most careful search failed to discover the fetal heart, although the spontaneous movements of the child showed that it was still alive. It was evident, therefore, that the heart's action had begun to flag, under some unknown morbid influence, probably identical with that which had caused the death of the third and the fifth child. It was evident, further, that if this lethal influence depended on any lesion of the fetal viscera, a premature confinement would rather hasten death than avert it; while, if it were due to some morbid condition of the placental or umbilical circulation, this expedient might possibly save the life of the child, as, in view of the previous history, there was so much reason to suppose that the child would die if left to itself. I determined to act on the hypothesis which afforded the only excuse for action or hope of safety, and, confirming the previous opinion, advised artificial delivery, to which the parents readily assented. The cervix was extremely soft and dilatable, and by means of Barnes' dilators, labor pains were induced in about twenty-four hours. The child (a girl) was born seven or eight hours later, and, although rather small, seemed fairly vigorous. It cried immediately after birth, and showed no sign of asphyxia. The cord was to external appearance healthy. The placenta adhered for nearly an hour, and then was removed by artificial detachment, and torn during the process. But that all fragments were entirely removed from the uterine cavity was demonstrated, if necessary, by the rapid and complete recovery of the mother.

In securing the cord, after the child had been washed by the nurse, I took the precaution to apply two ligatures, as tightly as possible. I then left the child in apparently a very satisfactory condition, but two hours later, four hours after birth, was recalled by the tidings that an alarming hemorrhage had just taken place from the cord. The nurse compressed the cord with her fingers, and a neighboring physician, summoned while awaiting my arrival, found that this manœuvre had nearly arrested the hemorrhage just before he came in. The child, however, was perfectly blanched, and to prevent, if possible, a recurrence of the danger, the doctor wound an elastic ligature tightly around the cord, from its free end to its cutaneous surface, not encroaching upon the latter. He confirmed the statement of the nurse, that the blood had been seen to ooze from a point above the upper ligature, just at the junction of the mucous and cutaneous surfaces of the cord. At this point a minute tear was perceptible.

I did not see the child until nearly half an hour after the accident. By that time color had returned, there was sufficient warmth, and a few drops of brandy in water were readily swallowed. The child was left wrapped in cotton-wool, and perfect quiet enjoined. This was at noon.

At four o'clock in the afternoon, when recovery from the first accident seemed complete, I resolved to take the last precaution against its repetition, which seemed only too probable, by passing a couple of hare-lip pins at right angles to each other through the cutaneous base of the cord, and winding a ligature tightly around them, as in the strangulation of a nevus. The child was not moved from its cotton-wool nest during the little operation. Neither at this time nor later was there any disturbance of respiration. At six o'clock, it was doing very well; at ten, as I entered the room, the mother exclaimed with great satisfaction that the baby must be growing stronger, for it had been screaming loudly for half an hour, and its cries had only just ceased. The quiet was ominous, and on approaching the child I found that the face had again become perfectly white, and that it had ceased to cry because it had ceased to breathe. The heart still beat feebly, but in a few minutes its pulsations also ceased, and life was completely extinct. Upon removing the coverings, I found that a slight amount of oozing had again taken place at the navel. There was none, however, around the hare-lip pins. This slight hemorrhage seemed altogether insufficient to account for the death. The real cause of death was revealed at the autopsy made twenty-four hours later.

AUTOPSY.

Abdomen.—Several teaspoonfuls of fresh fluid blood were found in the peritoneal cavity, some lying on the surface of the intestines, more gravitated into the flanks. There was no hemorrhage of the intestine, either into its coats or into the cavity. No trace of peritonitis. The blood seemed to have come chiefly from a rupture of the umbilical vein, between the navel and the liver, for in the connective tissue surrounding it, about half an inch above the navel, was a blood-clot the size of a French bean.

No hemorrhages were discovered in the liver, spleen, or kidneys, but minute submucous hemorrhages were scattered through the stomach.

Thorax.—Here a most peculiar appearance was presented. The lungs were fully expanded, and collapsed imperfectly on the removal of the sternum. Scattered over their entire surface were numerous hemorrhagic spots, whose pleural area varied in diameter from a few lines to half an inch. The depth of these foci was generally about the eighth of an inch. The deep extremity was somewhat smaller than the superficial, but in no case did they offer the wedge-shape characteristic of embolic infareti. Similar hemorrhagic spots were disseminated throughout the parenchyma of the lungs. Between these spots the lung-tissue was normal to the naked eye.

There was no effusion into the pleural cavity. There were no macroscopic alterations of the heart. The cranial cavity was not opened.

MICROSCOPIC EXAMINATION.

Umbilical cord.—The umbilical vessels were examined externally to the abdomen, and also for a short distance above and below the internal surface of the navel. All the sections were normal.

Liver.—Examination of sections at a low power in no case succeeded in discovering the distinct separation into lobules, which is usually so easy to demonstrate on the liver of a new-born child. At the same power, the larger bile ducts were observed to be surrounded by tissue, colored bright blue by the hematoxyline, in striking contrast to the pale color of the rest of the section. A higher power resolved these blue bands into masses of round nucleated cells. The liver-cells were filled with fine fat-granules, which in no case were aggregated into globules. The size, shape, and nucleus of the cells were preserved, the nucleus coloring deeply with hematoxyline.

Kidneys.—The epithelium was degenerated both in the cortex and in the medullary portion, but the process was much further advanced in the convoluted tubes than in the straight. In some of the tubes the epithelium was completely broken down, the nucleus gone in others, while the cells were full of fine granules; the nucleus was preserved and distinctly colored. The Malpighian glomeruli were generally intact, but in some cases the epithelium covering them was degenerated like that of the tubes. In some places, quite a large area of the microscopic section was so completely degenerated that it appeared a uniform pale-yellow color, no nuclei remaining to take up the color of the staining fluid. In other places again, a small number of the tubes would appear completely normal. There was no proliferation of epithelium, and the lumen of the tubes was nearly always free. The connective tissue was not increased. The blood-vessels showed a few fat-granules in the tunica media.

Stomach.—The sections of the stomach did not show any degeneration of the glandular cells, and were not sufficiently successful to demonstrate the condition of the cylindrical epithelium. On one section was found a mass of blood-corpuscles effused just at the base of the glands. The submucous blood-vessels showed the same sparse scattering of fine black granules between the nuclei of the muscular coat as were found in the renal vessels.

Lungs.—Blood-corpuscles were scattered in abundance throughout every section, sometimes aggregated into masses, when the section had passed through a focus of hemorrhage, sometimes sparsely disseminated. The capillaries all contained blood, and the loops of vessels which encircled the alveoli looked as if they had been artifically injected. In some cases, these loops almost entirely occluded the alveolus. There was also a great abundance of epithelium in various stages of fatty degeneration. In some cases the epithelium had broken down into fatty detritus. These appearances have been described in cases hitherto related. But one feature in this case, of which I have not found any previous mention, was the appearance of fat-granules in great abundance in the muscular coat of the arteries, interspersed among the nuclei. These granules dissolved in ether, and resisted acetic acid.

In two sections were discovered the point of rupture of medium-sized blood-vessels, with a stream of blood-corpuscles pouring through.

Heart.—The muscular fibres of the heart contained fat-granules, but in excessive abundance.

The case above described was evidently one of the rare disease first described by Hecker and Buhl in 1861, under the name of "acute fatty degeneration of the new-born." Buhl's description[1] is as follows: "The lungs contain smaller or greater, tolerably circumscribed hemorrhagic infarcti; the bronchi contain pure blood or bloody mucus. The parenchyma of the lung is somewhat edematous; the pavement epithelium filled with fat-granules. There is, further, fatty degeneration of the muscular fibre of the heart, and of the epithelium of the kidneys and liver. As a consequence of the pulmonary and cardiac lesions, the child soon shows symptoms of asphyxia and cyanosis; and as a consequence of the hepatic degeneration becomes icteric." Buhl attributes the multiple hemorrhages to alterations in the composition of the blood and the texture of the blood-vessels, both probably dependent upon the "acute nephritis and hepatitis."

In the *Arch. für Gynaek.*, Bd. x., Hecker describes a new case of this disease. The child died in fourteen hours, after a slight hemorrhage from the navel quite insufficient to explain the catastrophe. The icterus was present at birth, and intense. At the autopsy were found numerous subpleural ecchymoses, large wedge-shaped pulmonary infarcti, fragility of walls of pulmonary vessels. There was blood in the pericardium, stomach, and intestine; the liver was pale and fatty; the heart soft and fragile; the spleen enlarged. In another case, reported by the same author, the blood was leukemic. Hecker remarked that this disease is so rare that it has scarcely been mentioned in literature since Buhl's first description of it was given. Müller, in a chapter devoted to acute fatty degeneration of the new born in Gerhardt's Cyclopedia,[1] only quotes five articles on the subject; of these only two[2] describe the disease in the human subject. Furstenberg[3] describes an analogous affection in the new-born of domestic animals. Roloff writes about young pigs[4] and foals.[5] The latter case is really an acute malignant osteitis, and has but very slight resemblance with the morbid condition which occupies us. Müller himself contributes nothing original to the subject.

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[1] Klinik für Geburtskunde, 1861.

Three symptoms are prominent in the clinical history of this disease: umbilical hemorrhage, cyanosis, icterus; the latter constantly increasing until the moment of fatal termination. Of these, the first, or umbilical hemorrhage, was alone present in our case. It occurred earlier (two hours after birth) than in any case of which I can find a record. According to Hennig, of all cases of omphalorrhagia, the greatest number occur on the seventh day, that is, at or after the fall of the cord. He only counts 7 cases out of 135, as occurring on the first day. According to Bouchut, the greatest frequency is from the third to the ninth day. Tanner only mentions the cases which occur after the fall of the cord. Although the accident is itself infrequent (Hennig reckons it as occurring once in 5,000 children), only a certain proportion of cases are to be attributed to generalized fatty degeneration. The belief that the hemorrhage principally depends upon imperfect ligature of the cord is widely diffused, both among the laity and in the profession, and has been not infrequently the basis of suits for malpractice. Thus Cripps Lawrence[6] declares that early hemorrhage is from the funis, and easily controlled by prompt ligation, even when the blood comes from the *side* of the cord. In the latter case, the accoucheur is innocent of carelessness; but the ordinary ligature must be complemented by another on the ventral side of the bleeding point. "With this exception," asserts the writer, "omphalorrhagia preceding the fall of the cord is always due to imperfect ligature, or to imperfection in the material used for ligature, or to improper handling of the ligatured end of the cord."

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[1] Bd. ii., 1877.

[2] Hecker u. Buhl, loc. cit., and Hecker, *Monats. für Geburtskunde*, Bd. xxix.

[3] Virch. *Arch.*, Bd. xxix.

[4] *Ibid.*, Bd. xxxiii.

[5] *Ibid.*, Bd. xliii.

Obstetrical Journal, vol. iii., 1875.

Mr. Lawrence admits that hemorrhage from the umbilicus, which he calls secondary, is a serious and "sometimes" fatal accident. He fails, however, to perceive that this hemorrhage may occur before, as well as after, the fall of the cord. Braun, in 1871, had pointed out that the main significance of umbilical hemorrhage depended, not on the epoch at which it occurred, but on its origin from the umbilical vessels themselves, or from the "parenchymatous" vessels supplying the navel. The latter always depends on constitutional disease. Similarly Vogel describes the blood "welling up from the umbilical depression" left after the fall of the eschar. We have said that in our case, where the first hemorrhage took place two hours after birth, the blood was seen to issue from a minute opening at the junction of the mucous and the cutaneous surfaces of the cord, hence must be classified with those cases called by Braun "parenchymatous."

The constitutional disease to which such parenchymatous hemorrhage has often been attributed is hemophilia. This has sometimes been inferred merely from the repetition of the accident in several children of the same family. Thus Jenkins[1] remarks that 17 mothers, among those whose histories he had collected, lost more than one child by umbilical hemorrhage. The same repetition of the accident was remarked in several children of Mrs. H. (our case). Hennig, however, observes that the tendency to multiple hemorrhages, characteristic of these cases, bears much more analogy to scorbutus than to hemophilia. Grandidier[2] declares that navel hemorrhage is only to the smallest extent the expression of the hemophilic diathesis. It is not especially frequent in families of "bleeders," and the children who survive the accident do not manifest hemorrhagic tendencies in later life. Out of 228 cases of omphalorrhagia, only 14 come from "bleeders," belonging to 11 hemophilic families. The bleeding diathesis is 13 times more frequent in males, but omphalorrhagia is more frequent in female children. The evidence seems conclusive that the accident of navel hemorrhage is not, certainly in the great majority of cases, produced under the influence of the constitutional disease with which it seems most naturally affiliated.

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[1] Report on Spont. Umbil. Hem., 1858.

[2] Die freiwillig. Nabelblut. Cassel, 1871.

When the umbilical hemorrhage has been preceded by icterus, which gradually deepens coincidently with the repetition of the bleeding, there is no hesitation felt in referring the accident to the acute fatty degeneration which has been considered by Buhl as identical with the malignant icterus of adults. The hemorrhage is then generally considered to be a consequence of the icterus; as in acute liver atrophy of adults, the blood is supposed to be poisoned, "dissolved" by biliary acids absorbed from the degenerated liver-cells, and on this account to transude readily the walls of its containing vessels.

The autopsy in our case, however, demonstrated: 1st, that all the lesions proper to Buhl's disease may exist without the occurrence of icterus at any time before death. And 2d, that, in the absence of icterus, hemorrhages may occur—both umbilical and visceral—and in sufficient abundance to prove fatal. It is evident, therefore, that icterus is neither necessary to the diagnosis of the disease, nor to the production of its most dangerous symptom.

The icterus is in proportion to the degree of degeneration of the hepatic cells. In our case, although these cells were filled with fat-granules, their contour and nuclei were intact, none had fallen into the detritus characteristic of the advanced stages of acute hepatitis. We must evidently conclude that, in this case, death occurred at a comparatively early stage of the disease.

If the hemorrhage can be thus independent of the icterus, the sign of blood-poisoning, there is little reason for admitting, with Buhl, that it, or even the generalized fatty degenerations, result from the action of a special poison in the blood. The multiplicity of the hemorrhages indicates a cause for them that must have been generalized throughout all the tissues and organs of the body.

Many morbid conditions are known to be characterized by multiple hemorrhages. Besides scurvy, hemophilia, and malignant icterus already alluded to, it is well known that in yellow fever and phosphorus poisoning, with their remarkable analogies to the last disease, and also in pernicious anemia, which in many respects approaches the first, visceral hemorrhages are as frequent, or even essential to the complete evolution of the morbid process.

It is remarkable that anatomical alterations of the walls of blood-vessels have rarely been demonstrated in these hemorrhagic diseases. In scurvy, Krebel[1] imagines that the small blood-vessels are partially paralyzed, a gratuitous assumption, and which would not really explain the hemorrhages. In hemophilia, many investigators have found no alterations of the blood-vessels, although Legg and Grandidier admit that, in a number of cases, their walls have been found abnormally thin. Immerman[2] says: "We must accept as an anatomical substratum [of this disease], as an anomaly not exclusive to chlorosis, a general hyperplasia of the arterial vascular system, as also the partial fatty alteration of the walls of the blood-vessels which usually accompanies it."

In regard to yellow fever, Haemisch[3] observes that, when the red corpuscles are destroyed, the blood decomposed [under the influence of the fever poison], the blood loses its power to nourish tissues [including the walls of vessels]; hence their great fragility and consequent rupture. Leyden[4] observes that fatty degenerations are produced by all poisons which destroy blood-corpuscles. When the ductus choledochus was tied, and the absorption of bile necessitated by obstruction to its passage, icterus was first induced, then multiple ecchymoses. "The action of altered blood on a part [in producing fatty degeneration] is analogous to the effect of exclusion of blood by means of an embolus or a ligature."

The majority of the writers on phosphorus poisoning refer the characteristic hemorrhages directly to the alteration of the blood, which alone is sufficient to cause transudation.[5] But Klebs[6] found in the adventitia of the small vessels, both veins and arteries, abundance of fine granules, partly albuminous, partly fatty. There was no alteration of the vessels of the brain, and this organ alone was exempt from hemorrhage. "The alteration of the vessels," remarks Klebs, "is the necessary intermediate lesion between the alteration of the blood and the production of extravasation. The latter never result from coarser ruptures of continuity of the vascular walls."

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[1] Der Scorbut, 1862, S. 190.

[2] Ziemssen's Cycloped., art. Hemophilia, Bd. xii.

[3] *Ibid.*, Bd. ii.

[4] Der Icterus, p. 180.

[5] See Lewin, Virch. *Arch.*, Bd. xxi. Bernhardt, *ibid.*, Bd. xxix. Wegner, *ibid.*, Bd. xl. Baunier, *Gaz. Med.*, 1868. Lebert et Wyss, *Arch. Gen.*, 1868.

[6] Virch. *Arch.*, Bd. xxxiii.

On the other hand, as is well known, Cohnheim[1] has shown that even a brief interruption to the nutrition of the walls of blood-vessels will so injure their integrity that their pores will admit the transudation of red blood-corpuscles.[2] Cohnheim has further demonstrated, that, not only interruption of the circulation by ligature, but also venous stagnation will suffice to produce the deterioration.[3] Now, in the lungs of our case was abundant evidence of extensive venous stagnation; the small blood-vessels and the capillaries were choked with blood. The cause of this arrest of the pulmonary circulation lay in the weakened force of the partially degenerated heart. In other cases on record, fatty degeneration of the cardiac muscles has been much more extensive than was noted in ours; and, perhaps correlatively, asphyxia has been a prominent symptom, while in our case it was entirely absent. But the flagging of the heart's action was shown even before birth, by the impossibility of discovering its sounds on auscultation.

The hemorrhages in the lungs, the most extensive and remarkable revealed by the autopsy, were therefore explicable by one or more of several different lesions. 1st, The fatty infiltration of the walls of the blood-vessels. 2d, Nutritive alteration of these walls, not demonstrable to the microscope, and dependent upon, (*a*) acute poisoning of the blood; or on (*b*) intensely anemic impoverishment of the blood; or (*c*) on the venous congestion, itself caused by failure in the contractile force of the heart.

What is the immediate cause of the fatty degeneration of the heart, of the blood-vessels, the epitheliums, and the gland cells, which underlies the hemorrhage and all other clinical symptoms of the disease?

As already noticed, Buhl assimilates the disease to malignant icterus, and considers that an acute inflammation sets in shortly before birth and rapidly fulfils its course afterwards.

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[1] Ueber die Embol. Processe, 1872.

[2] Concerning the precise mechanism of this extravasation, and ingenious hypotheses on the nature of the pores, see Schklarewsky, Pflug. *Archiv*, Bd. i. (Ueber Diapedese.)

[3] Virch. *Archiv*, Bd. xli., S. 220.

For obvious reasons, the special clinical symptom of such an inflammation, namely fever, cannot be ascertained at the time the disease is presumed to commence. But fever has not been noticed after birth, in the cases of infants dying from acute fatty degeneration. To us, the facts in regard to the multiple fatty degenerations all point, not in the direction of inflammation, but of direct arrest of nutrition, by arrest of vascular supply.

That diminution of the quantity, as well as alteration in the quality, of blood supplied to a tissue may induce fatty degeneration in it is well known. Several recent experiments set this part in a very clear light. Zielonko[1] introduced two complex conditions into his experiment, when he gradually narrowed the entire aorta, and observed the effect on the kidneys. According to the degree of narrowing, he found albuminous tumefaction of the kidney, moderate hydronephrosis, and fatty degeneration of the epithelium. But in this case the rise of tension in the venous system must have been great enough to account for the results, as much as the arterial anemia.

But Perl[2] imitated pathological conditions better, when he subjected dogs to repeated venesections, at intervals of five days. When three per cent of the body weight was abstracted by the bleeding, fatty degeneration of the heart was always produced.

Von Platen[3] gradually compressed the renal artery by means of a silver clamp. This interruption to the circulation of the kidney was followed by various degrees of fatty degeneration of their epithelium. If only a single branch of the renal artery was compressed, the degeneration was limited to the territory supplied by it.

Recklinghausen[4] describes a cloak ("*Mantel*") of fatty infiltration around a hemorrhagic infarctus of the kidney. He observes that, after ligature or embolus of one branch of a renal artery, there will be necrosis in the centre of a territory supplied by it; but fatty infiltration on the periphery, where an imperfect nutrition is maintained by means of collateral blood-vessels.

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[1] Virch. *Arch.*, Bd. lxi., S. 267.

[2] Virch. *Arch.*, Bd. lix.

[3] Virch. *Arch.*, Bd. lxxi., Heft I.

[4] Virch. *Arch.*, Bd. xx., S. 205.

So far as I know, Pepper is the only writer on pernicious anemia, who considers it as other than a primary blood-disease, characterized by rapid diminution in the mass of the blood, and in the number of its red corpuscles. Pepper, however, in a single autopsy, found an alteration in the medulla of the bones, resembling that described by Neumann in medullary leukemia; and on the strength of this observation, this author ranks pernicious anemia as a form of leukemic disease.[1]

If, for the reason alleged in the footnote, we set aside this opinion, we should find all observers agreed in considering this "idiopathic anemia," and the fatty degenerations characteristic of it, as an exquisite clinical counterpart to the pathological experiments already quoted: to the experiments of Cohnheim and Arnold, showing the influence of denutrition of the walls of blood-vessels upon the production of hemorrhages; to those of Ponfick, Perl, Platen, and others, showing the influence of diminished afflux of blood in the production of fatty degenerations or infiltrations.

"The general mass of blood is diminished; there is true oligemia; multiple hemorrhages are frequent; those into the retina almost characteristic. We shall not err if we attribute this development of a hemorrhagic diathesis to an alteration of the walls of blood-vessels, caused by the alteration in the quantity and the quality of the blood. Anatomical alteration of the vessels may be demonstrated in many cases." [So in the pulmonary vessels in our case.]

"Clinical experience teaches that the diminution of red corpuscles is the alteration of the blood which is most potent in determining the [acquired] hemorrhagic diathesis." [This cannot include hemophilia, where no such diminution exists.] "The hemorrhages, and the fatty degenerations of the heart, the intima of the arteries and capillaries, the hepatic cells, the renal epithelium, and the peptic glands, observed in various cases of pernicious anemia, are explained by the diminution in the mass and in the corpuscular richness of the blood."[2]

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[1] *Am. Journ. Med. Sci.*, Oct., 1875. This opinion seems to us unwarranted, for in pernicious anemia, the diminution of red corpuscles is not accompanied by a marked increase of the lymphoid elements of the blood.

[2] Immermann, *Deutsches Archiv*, Bd. xiii., p. 217.

Biermer originally maintained that the visceral hemorrhages of pernicious anemia were always associated with fatty degeneration of blood-vessels. But Muller[1] failed to find this in quite a number of cases. "In these, other forms of nutritive alteration of the vessels must exist."

The fetus is tolerably well protected from the influence of the poisons capable of producing "acute fatty degeneration," in the way Buhl and Hecker suggest.[2] But, on the other hand, it is peculiarly exposed to alterations of nutrition, caused by variations in the amount of blood-supply. Disseminated lesions of the placenta, not visible to macroscopic examination, may destroy a sufficient number of villi to seriously diminish the quantity of nutritive material brought to the fetus. To an inflammation of the placenta, starting from the decidua, it is well known that Rokitansky attributed many cases of "tabescence of the fetus," and also most cases of "adherent placenta" and "placenta polypus."[3] As is also well known, the possibility of inflammation of the placenta has been denied, principally on the ground of the very small amount of connective tissue in it, and also on the absence of capillaries, except in the vascular loops of the villi.

Maier,[4] however, has more recently described a lesion accepted as placentitis by Schroeder[5] and Spiegelberg,[6] and which consists of a proliferation of the intervillous conjunctive tissue. This proliferation may begin either in rudimentary conjunctive tissue between the villi, or else in the adventitia of the arteries as a periartritis. This proliferation causes a compression of vessels and an atrophy of villi "which, if very extensive, must lead to the death of the child." Or again, the process may begin in a thickening of the decidua serotina, which becomes closely adherent to the altered placenta tissue [apparently by connective filaments binding together the free ends of the fetal villi and the maternal sinuses in which they float], so that the two can no longer be separated. From the altered serotina, innumerable processes pass into the placenta, and there connect with the increasingly thickening masses of conjunctive tissue.

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[1] Ueber progressive Anämie. See also Gusserow, *Archiv für Gynaek.*, Bd. ii., 1871. Ponfick, *Berlin. Klin. Wochen.*, 1876.

[2] Hecker relates a case of "acute yellow atrophy" in a woman seven months pregnant, and ranks it with the acute fatty degeneration of the new-born. He thinks that, in both cases, some sudden decomposition of the blood occurs from causes hitherto unknown. (*Monatschr. für Geburtskunde*, 1865.)

[3] Lehrbuch für Path. Anat., Bd. iii., S. 545.

[4] Virch. *Arch.*, Bd. xlv, 1869.

[5] Lehrbuch der Geburtskunde.

[6] Lehrbuch der Geburtskunde, Bd. i., 1877.

Neunsam[1] apparently described an advanced stage of this same lesion, under the name, Sclerosis of the Placenta. He found, in the tissue of the latter, hard white places, showing no trace of normal cavernous structure, and the hyaline basement substance of the villi changed to conjunctive tissue, granular and cloudy.[2]

Schroeder remarks that it is this "cirrhosis" of the placenta which is the common cause of its adhesion to the uterus. The chances for the life of the fetus depend upon the extent to which the lesion progresses before birth.

It is a misfortune that, in our case, as well as in the others like it which have been reported, the placenta was only cursorily examined. But the fact that it adhered closely to the uterine wall, and could only be detached with tearing, offers a strong presumption that sclerosis of the placenta existed. We may be permitted the probable hypothesis, which may easily be tested in other cases, that by such a lesion the blood-supply to the entire organism of the fetus was gradually diminished, as in the experiment of applying a ligature or a clamp to the aorta or renal artery, and that, under the influence of this oligemia, the nutrition of the blood-vessels became fatally impaired, and the glandular epithelium became fatty.

It is noteworthy that, in previous confinements, Mrs. H. had also experienced an adhesion of the placenta.

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[1] *Monatschr. der Geburtskunde*, 1861. Bd. 17, p. 153.

[2] Maier insists that the lesion described by him has no connection with this, but it is difficult to see why.

ON THE POSTURAL TREATMENT OF TYMPANITES INTESTINALIS FOLLOWING OVARIOTOMY.

BY

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THE frequency of ovariotomy, and the many successful operators in this and other countries, render the details of ordinary individual cases not only uninteresting to the readers of medical journals, but wholly unnecessary as a means of instruction. It is not the purpose of the writer of this brief paper to relate all the steps in the operation, or recount all that was done by his direction in the after-treatment of a recent case of ovariotomy of his own, but only to call attention to one mode of procedure in the after-treatment which, he firmly believes, saved the patient's life; whereas the case would have terminated fatally but for its adoption. It is not claimed that this peculiar treatment is wholly original with the writer, or that it is unknown to many in the profession, this is a matter of minor importance, but it is believed that a knowledge of the mode of treating tympanites, or intestinal obstruction succeeding ovariotomy, as described in this paper, is, to say the least, not widely diffused, even among those who are known as ovariotomists. The writer feels fully warranted in stating this, as the late Prof. Peaslee, whose familiarity with the literature of everything pertaining to gynecology none can question, a few days previous to his last illness requested him to publish an account of the case here related, as the treatment made use of was entirely new to him, and he thought it was sufficiently important to become widely known.

CASE.—The patient upon whom I operated was forty-six years of age, unmarried, much emaciated, and in a very feeble condition. The tumor removed was a multilocular cyst of the left ovary, with a long and very broad pedicle; the weight of the tumor was twenty-eight pounds; it had but few adhesions and was easily removed; there were about fifteen pounds of ascitic fluid free within the peritoneal cavity. The patient did not bear the operation well, being even considered dead at one time by some of my assistants, but rallied under the influence of brandy and ether administered hypodermically. The pedicle of the tumor was secured by a Spencer-Wells clamp, of the largest size. On the ninth day after the operation, the patient had a severe attack of vomiting, causing the clamp to be torn loose, the lowest suture to be also torn out, and the lower angle of the abdominal wound to yawn, through which gap the serum from the abdominal cavity exuded freely for two days. Her stomach was very irritable, and fearing the effects of vomiting upon the pedicle and abdominal incision, she was for the six days following not allowed to swallow any food except an occasional teaspoonful of milk porridge, but was nourished entirely by the rectum; soon after food was taken into the stomach, the bowels became tympanitic, and were thus more or less affected at different times, until the close of the second week. The bowels in the mean time were moved at intervals by laxatives and rectal injections. For the tympanites, nux vomica with creosote was given to overcome the atony and prevent further decomposition in the intestinal canal. The sulphate of quinia, as recommended by Wells, and an infusion of the mentha viridis, as advised by Peaslee, were both used per rectum at different times for the tympanites, with markedly good results. The patient seemed to be rapidly convalescing, the temperature for days not going above 99½° Fahr., the pulse being under 100 per minute, the skin was moist and cool, her general aspect was all that could be desired, with no apparent cause existing for any doubt as to her ultimate recovery until the twenty-third day after the operation, when the tympanites again became troublesome, and she complained of her inability to pass any flatus by rectum, and of pain in the region of the pedicle of the extirpated tumor. I deemed this condition of things due to atony of the intestines, and accordingly ordered the administration of nux vomica by the mouth, and an infusion of mint with quinia by the rectum. At my visit on the evening of this day I found her unrelieved, the injection had come away with but little flatus, the pain was more severe, and the tympanitic distention much increased, while at the same time the peristaltic action of the intestine was fully restored, as could be plainly seen and felt through the attenuated abdominal walls. I ordered the hypodermic administration of morphine, and a repetition of the nux vomica and the enemata. The following morning, the patient was in no degree relieved, except from the intensity of pain; on the contrary, the symptoms were aggravated: her countenance had an anxious expression, the pulse was feeble, but the temperature showed little change, as it stood at 99° Fahr. The muscular contraction of the intestines, essaying at short intervals to expel their contents, could be plainly distinguished, as well as the site of the intestinal obstruction in the region of the pedicle. The action of the intestines produced severe pain. Occasionally, with the paroxysms of pain, there was vomiting. For the following twelve hours, all of the distressing and unfavorable symptoms were progressive in their character;

hiccough set in, the countenance became pinched and anxious, the vomiting was more frequent, and she grew rapidly feeble. There was, however, no slacking of efforts to overcome the intestinal obstruction by means of copious enemata through a long tube, yet the length was of no significance, as it could not be passed beyond the sigmoid flexure, that being the location of the obstruction. Massage was faithfully practised, but none of the means made use of thus far were of any avail, and the case now seemed hopeless. The opinion of counsel concurrent with my own was, that relief must be soon obtained or the patient would succumb.

We believed that the tympanites was due to a twisting of the intestine by gas, which the pedicle, with the exudation in the pelvis that occurs even in the most favorable cases of ovariotomy, had prevented from becoming untwisted. I thought of puncturing the inflated intestine through the abdominal wall, by means of a fine trocar, as I had done in previous cases, but I am compelled to say never with very satisfactory results. But before having recourse to the trocar, I concluded to try the effects of postural treatment, and, if necessary, inversion of the patient, with the view of causing by gravitation the pressure to be removed from the pelvis, where there was every reason to think the obstruction existed.

She seemed so near moribund from exhaustion that she was entirely indifferent as to what was being done for her. With the aid of my colleague, Prof. Andrews, and one of my assistants, I took the patient from her bed, and gradually inverted her; there was no effect manifest from partial inversion, but when we got her in the position of complete inversion, really standing her upon her head, there was, to our gratification and the manifest relief of the suffering woman, a rush from the anus of the pent up intestinal gas, coming out with a force more remarkable than anything of the kind I ever before witnessed. The patient, as she began to experience relief, instead of being passive in our hands, complained in no mild terms of the unkind and ungentlemanly treatment she was receiving. From this time there was no further trouble; if the gas seemed to be accumulating or was not readily expelled, raising her hips, gentle kneading, or turning her from side to side would cause it to be expelled. The patient encountered no more difficulties, and made an excellent recovery.

The simple accumulation of gas in the intestines, unattended by inflammation or septicemia, is without question, as stated by Peaslee,[1] a rare cause of death succeeding ovariotomy, yet Kœberle[2] thinks that many die from this cause alone, judging from accounts which he has received.

If there is no obstruction to the passage of gas through the intestinal canal, and tympanites is alone due to atony of its

[1] Ovarian Tumors. New York, 1872.

[2] Operations d'ovariotomie. Paris, 1865.

muscular structure, there is no cause for apprehension, as nux vomica, massage, quinine, enemas, or faradization will usually procure relief.

The causes which give rise to the accumulation of intra-intestinal gas and the consequent tympanites have been admirably summarized by Kœberle[1] as follows:

1. A condition of atony of the intestines, particularly of the rectum, in connection with more or less pelvic peritonitis.
2. A spasmodic condition of the sphincter ani.
3. The presence of fecal matter obstructing the passage.
4. The twisting of a loop of intestine.
5. Mechanical obstacles exterior to the intestines.

In the case here related, it would seem as if there was a combination of the last two causes above-mentioned, producing obstruction. There was a twisting of a loop of intestine, and the pedicle of the tumor fastened externally served as a mechanical obstacle.

It is not alone in the tympanites or intestinal obstruction following the operation of ovariotomy that postural treatment carried to the extent above described may prove of service, but it would seem as if there are many pathological conditions where it can be useful both for diagnosis and treatment. Since this paper was begun, I have seen in consultation a case of intestinal disease, supposed to be due to obstruction in the region of the sigmoid flexure, for the reason that, with the patient lying in bed, a rectal tube by repeated efforts could not be passed beyond that point; but by putting her in the knee-chest position, the tube was easily passed to the transverse colon.

Every gynecologist and obstetrician is aware of the value of posture for diagnosis and treatment of a variety of conditions. The case here related, which is used as the text of this paper, serves to show that it can be used advantageously even more than heretofore, and illustrates how gravitation may prove a factor of disease, and how in turn the same may be made use of to cure disease.

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[1] Op. cit.

THE OPERATION OF EPISIOTOMY AS A PREVENTION OF PERINEAL RUPTURES DURING LABOR.[1]

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As early as 1810, Michaelis[2] recommended incisions in the median line of the perineum to prevent its rupture, but the recommendation did not meet with favor. Among its opponents[3] were Jörg, Schmitt, and Kilian.

In 1836, Von Ritgen published an article, "Ueber Skarification der Scheide."[4] He was led to try scarification of the vagina, not only from the frequent good results that he had obtained from scarification of the os uteri, but also from the want of efficiency, at all times, of the practices then in vogue, for the protection of the perineum. His method differed only from that of Michaelis in the site of the incisions. The operation, as taught by him, consisted in making seven small nicks on each side of the vaginal orifice, at the moment of its greatest distention, *i. e.*, when the head is from one-fourth to one-third expelled. Not any incision was to exceed a line in depth. By means of these fourteen incisions, he claimed that the orifice gained two inches in its diameter, and the head being allowed to escape gradually, the perineum needed no support. The frenulum remained perfect, no rent occurred at any point, not even from the incisions, and the passage of the shoulders produced no laceration. He employed an instrument fashioned after the English hernia knife, introducing it in the absence of a pain, by sliding the blade, flat-wise, between the rim of the orifice and the head, and then incising by directing the cutting edge toward the vagina. He did not insist upon the fourteen incisions, for he found that ten, or even six, were sometimes sufficient, but they must never be nearer to the posterior labial commissure than an inch, and must terminate at the same distance from the clitoris. If the rigidity was not at the external orifice, then he incised the stricture wherever found. He asserted that scarification did not dispense with the necessity, either for securing a slow expulsion of the head, or for observing that the shoulders clear the outlet of the pelvis with the bis-acromial diameter in relation with the antero-posterior diameter of the inferior strait. He resorted to this procedure in private as well as hospital practice. He found the resulting inflammation to be slight, in fact very rarely sufficient to require any special treatment. The cicatrization was so rapid that a few weeks afterwards, there were no traces of the scarification, and the vaginal orifice was smaller than when no incisions were made.

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[1] Read by Albert H. Smith, M.D., before the Obstetrical Society of Philadelphia, February 7th, 1878.

[2] Lehrbuch der Geburtshülfe von Schroeder. Vierte Auflage.

[3] Lehrbuch der Geburtshülfe von Scanzoni. Vierte Auflage.

[4] Neue Zeitschrift für Geburtskunde, iii. Band.

Cazeaux,[1] in an early edition of his work, after indorsing the teaching of Eichelberg, who cut the vulvar orifice laterally and not posteriorly, limited the practice to those cases when the head is at the vulva, and the rupture is imminent. He recommended the use of Pott's bistoury, which was directed to be passed between the head and the margin of the vulva, incising only as far as necessary to allow the escape of the head. He further agreed with Eichelberg that the place of incision should be at the "thickest part of the vulvar orifice." In a later edition[2] the operation is spoken of as a good one, but to be resorted to only in great necessity. A preference is given to strong blunt-pointed scissors, one blade to be inserted between the child's head and the vulva, and an incision made three-eighths of an inch in length.

Dr. Blundell[3] is said to have advocated and practised lateral incisions of the vaginal orifice, as a prevention of a tear in the median line of the perineum.

The operation found, however, its most enthusiastic advocate in Chailly-Honoré,[4] who, having, as he stated, availed himself of its service for twenty-five years, knew well how to recommend it. He referred to it "as the excellent practice of

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[1] Cazeaux's Midwifery. 4th American Edition.

[2] Cazeaux's Midwifery. 5th American Edition. Revised and Annotated by S. Tarnier.

[3] Surgical Diseases of Women. Baker Brown. 3d Edition.

[4] Traite Pratique de l'art des Accouchements. Cinquieme Edition, 1867.

Professor Dubois,[6] who taught that the incisions should be made with scissors instead of bistoury, that they should extend in an oblique direction, and should not exceed two centimetres in length. He based his indorsement of the procedure on the greater advantage of an incised wound over a lacerated wound, in respect to the rapidity and perfection of union. He admitted, however, that perineal ruptures cannot always be avoided, yet he believed that incisions would often prevent the accident, or, at least, would mark the place where the rupture should occur, and direct the tear away from the rectum. He advised a resort to labial incisions in forceps cases, when the constriction of the vaginal orifice was marked, and the resistance of the perineum was great.

Naegele[1] alluded to the practice as a prevention of laceration.

Schultze[2] recommends four to five little incisions on each side of the posterior part of the vulvar circumference. The line of incision to be directed toward the sciatic tuberosities, and as far as possible from the raphé of the perineum.

Tyler Smith[3] indorsed a resort to incisions after failure to secure dilatation by means of fomentations, tartar emetic, venesection, and chloroform. He expressed his belief that incisions prevent extensive laceration, and that the wounds from such an operation heal readily.

Gustav Braun[4] advises incisions under the following indications: 1st, in constriction and great resistance of the vaginal orifice, as is frequently observed among primiparæ who are advanced in years; 2d, in cases of long perineum with bulging of the posterior third; and 3d, where the rupture is central, with escape of a fetal hand or foot. He directs the incisions to be made as the woman lies upon the left side. The operator is to stand at the right side of the bed, and with the left hand introduced between the thighs of the patient, is to make direct pressure on the fetal head, regulating thus its expulsion; while a probe-pointed bistoury, held in the right hand, is slipped between the head and the vulvar orifice.

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[1] Traité Pratique de l'art des Accouchements. Naegele-Grenser.

[2] Traité Pratique de l'art des Accouchements. Naegele-Grenser, page 191.

[3] Lectures on Obstetrics. W. Tyler Smith-Gardner.

[4] Compendium der operativen Gynäkologie und Geburtshülfe. 1860.

Then, as the pain comes on, the cutting edge of the knife is directed towards the tuber ischii, and the handle being simply raised, the downward pressure of the head makes an incision of from four to five lines. If the dilatation thus obtained is not sufficient, and the constriction of the vaginal orifice still threatens a perineal rupture, then a similar incision is to be made on the left labium major. He further states that the cicatrization is rapid, and does not produce constriction of the vaginal orifice. In his clinic in the General Hospital of Vienna, I had frequent opportunities, during the winter of 1873–4, of witnessing this method of operation.

Carl Braun,[1] in whose writings I find the first use of the term episiotomy (*επισειον*, *vulva*, *labium pudendi*), believes that, by careful support of the perineum, incisions in the vaginal orifice are seldom necessary, and that the operation is resorted to mainly by those who lay no weight on the importance of supporting the perineum.

Scanzoni[2] favored incisions on the ground that the operation was almost painless, and that when the cut was sufficiently large, there was no disposition for the tissues to tear; that the hemorrhage was slight, and the healing so rapid that, in the course of a few days, small triangular cicatrices remained alone to mark the site of operation. He did not believe that scarification of the vaginal orifice would always save the perineum, stating that while he admitted that there were cases in which the most careful management failed to secure this, he was convinced that the practice would prevent many a threatened rupture. He hoped that what he had written on the subject would remove the prejudices against the operation, and would lead to its general introduction in obstetric practice. In another work,[3] he repeated the recommendation, as he had frequently put it to the test.

Simpson[4] mentioned lateral incisions among the means of preventing central perineal lacerations. The practice, as sanctioned by him, consisted in making one or two slight cuts on either side of the fourchette, so that, if a laceration must occur, there should be a choice of site and direction.

Barnes[5] recommends episiotomy when the vulva is rigid and the protruding perineum threatens a central rupture; and also in mento-sacral positions, in order to facilitate the escape of the chin over the anterior border of the perineum. The edge of the vulva is to be raised by the forefinger passed between it and the head, and to be incised at two or three points and near the posterior commissure.

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[1] Lehrbuch der Geburtshülfe, 1857. [2] Lehrbuch der Geburtshülfe, 1866.

[3] Diseases of Females, Gardner, 1856.

[4] Obstetrical Works of Sir J. Y. Simpson, Bart. J. Watt Black, 1871.

[5] Barnes, Obstetric Operations. Dawson, 2d American Edition.

Baker Brown[1] concurs with Dr. Blundell in regard to the place of incising the vaginal orifice, and he would resort to the procedure if chloroform failed to effect the dilatation, or if there should be any contra-indications to the use of anesthetics.

Dr. Goodell, in an article on the Management of the Perineum during Labor,[2] questions the propriety of incising a rigid perineum, except on account of a cicatricial condition. He agrees with some others in giving an incision little preference to a laceration of the perineum, in regard to rapidity of union.

Leischman[3] admits that there are occasional cases of rigidity of the perineum, where it is justifiable to make slight incisions with a lancet or the finger-nail. His views agree with those of Dr. Agnew[4] in fearing the abuse of the practice among inexperienced obstetricians.

Playfair[5] refers to the recommendation by other teachers of incisions on each side of the raphé perinei to prevent laceration; but while he has no fear of the safety of the operation, he questions its utility, and would limit the practice to cases of cicatricial contraction. He asserts that the tear is always in the median line, and excludes the consideration of rapid union by maintaining that the edges of the tear are as clean as if cut.

Clay[6] advises the support of the perineum after incising, for fear an incision might give origin to a laceration.

Roberts[7] recommends, in obstinate rigidity of the vulva, several small incisions at its posterior part.

Schroeder[8] advocates episiotomy when the head is large and the vulvar orifice is small. Instead of waiting for a dilatation which the parts do not promise, he advises incising the tense border of the vaginal orifice sufficiently to permit the escape of the head. The incisions are to be made with either knife or bistoury, to be two in number, and to take the direction of the tuber ischii.

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[1] Surgical Diseases of Women. 39th Edition.

[2] American Journal of Med. Sciences, 1871.

[3] System of Midwifery, 1873.

[4] Lacerations of the Female Perineum.

[5] System of Midwifery, 1876.

[6] Hand-book of Obstetric Surgery.

[7] Guide to the Practice of Midwifery.

[8] Lehrbuch der Geburtshülfe. Vierte Auflage.

Dr. Madden[1] refers to perineal incisions as one of the means of preventing laceration. He has resorted to the practice in several instances with advantage, and yet he does not recommend the measure, except on rare occasions, when manual support of the perineum fails.

Butignot, in the *Gazette des Hôpitaux*, 1859,[2] advised bilateral incisions near the posterior commissure of the labia, when there was a threatened rupture of the perineum, and the vaginal outlet was narrow.

Cohen[3] recommended "tenotomy" in the neighborhood of the clitoris, using for the purpose a "lithotomy knife." He believed that the tear did not begin in the integument, but had its origin in the fascia beneath, and on this account he made a subcutaneous operation.

In the *Dictionnaire de Médecine et de Chirurgie Pratique*, Armand Desprès mentions incisions of the labia majora as a means of preventing perineal rupture, and curved scissors are advised for the purpose.

Dr. Graily Hewitt[4] asserts that support of the perineum as a preventive of laceration is worthless, but he refers to the recommendation of others, to make incisions on each side of the fourchette when there is a threatened rupture.

Dr. Johnston, in the clinical reports of the Rotunda Lying in Hospital, published in the Dublin *Quarterly Journal of Medical Science*,[5] February, 1870, found the necessity to resort to vulvar incisions but once in 1,159 deliveries, and then on account of gidity. In the following year,[6] among 1,087 patients, the perineum was incised but twice, its great "elongation and toughness" preventing the expulsion of the child. As thus employed, it was a means of overcoming an obstruction to labor, rather than of preserving the integrity of the perineum.

Olshausen[7] believes that the resistance at the vaginal orifice is caused by the constrictor vaginæ, which is felt as a tense band directly beneath the mucous membrane, and 1.5 centimetres posterior to the frenulum. He states that in some cases the laceration has its origin in the fibres of the muscle, and that this is followed by tearing of the subcutaneous connective tissue and the integument; or, in other cases, that the lesion is limited to the vagina, and involves only the mucous membrane. For this reason he recommends the incision to be made from the vagina, and he thinks it can be accomplished more readily by means of a curved, probe-pointed bistoury with a short cutting edge, than by means of scissors. He prefers the subcutaneous section of the sphincter vaginæ, according to the suggestions of Simpson and of Cohen, to the ordinary method of episiotomy, namely, that of incising in the direction of the tuber ischii on one or both sides of the raphé. He believes that resort is had to incisions oftener than is justifiable. He further urges that the operator should be convinced that the rupture is inevitable, before resorting to the procedure, and should rarely make incisions greater in extent than two centimetres.

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[1] Lacerations of the Perineum, Sphincter Ani, etc. Amer. Journal of Obstetrics, May, 1872.

[2] Year Book for Medicine and Surgery, 1860.

[3] Mon. für Geb., Supp. 1861, quoted in Year Book for Medicine and Surgery, 1873.

[4] Year Book for Medicine and Surgery, 1862.

[5] American Journal of Obstetrics, 1870.

[6] Ibid, 1871.

[7] Ueber Dammverletzung und Dammschutz. Sammlung Klinischer Vorräge von Volkmann.

Dr. Pallen[1] believes that, under certain conditions, incisions in the labia offer the only hope of saving the perineum. His method differs from that of others in the time selected for the operation; namely, during the absence of the pain. He recommends the incisions to be made with scissors, upon both sides, and midway between the fossa navicularis and the fourchette. In his article, I find the first published suggestion in regard to closure of the incised wounds. He advises the use of silver sutures and finds that the surfaces heal readily.

Dr. Barker[2] considers a small perineal incision a preventive of rupture, when the vaginal orifice is small and the perineum unyielding.

In the Woman's Hospital of Philadelphia, in a period of two years, ending Nov., 1877, 212 women were delivered, all of whom were under my direct charge. Of this number, 101 were primiparous. I subjected the genitalia of each lying-in patient to a careful, ocular examination, and I noted conscientiously each lesion. Of the 212 women, 26 suffered perineal ruptures, of whom 21 were rimiparæ and 5 multiparæ. The lesions varied in extent from a tear of the fourchette to a laceration as far as the sphincter ani. The rupture in no case involved the sphincter, and only in two instances extended as far as its margin. The patients were delivered in the side position, and the gradual and even distention of the perineum was favored by careful and systematic support of the fetal head in every case.

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[1] New York Medical Journal, May, 1876.

[2] The Puerperal Diseases.

In 56 cases, when the perineum was unyielding, from simple rigidity or from a cicatricial condition, I incised the vaginal orifice, and in nearly all of these cases I demonstrated to others and satisfied myself that episiotomy saved the perineum. Rigidity of the perineum occurred most frequently in old primiparæ. In two instances, the perineum was unyielding from cicatrices, the result of previous laceration. In one case, the resistance was caused by the presence of condylomata on the perineum. The time of operation was when the head was distending the vulvar orifice. The site selected for the incision was a point about one-third the distance from the posterior commissure to the clitoris. The instrument employed was the ordinary probe-pointed, curved bistoury. The knife was slipped between the head and the lateral margin of the vaginal orifice, and its cutting-edge directed, during a pain, towards the tuber ischii. The pressure of the head was often a sufficient force to carry the knife into the tissues already made tense by the dilatation. Care was thus taken to avoid the fourchette by incising the sides of the vulva, and cutting in a direction at right angles to the raphé perinei. If, after an incision upon one side, a rupture still seemed imminent, then resort was had to a similar operation upon the opposite side. The length of the incision never exceeded 1.5 cm. The cuts seemed only to involve the mucous membrane, but I had not opportunity to verify this by post-mortem examination. The patients complained of no suffering, in fact were often unconscious of the operation, the incisions being made during a pain. The operation was attended by no hemorrhage. With the exception of a few cases of diphtheritic deposit upon the incised surfaces, the incisions did not complicate the lying-in. The wounds showed no erysipelatous appearance. They healed readily, and when opportunity was had to examine the patients, some months after delivery, the small cicatrices were scarcely recognizable.

During the first year of my service, inasmuch as I had seen in Vienna no special after-attention given to the incisions, I did not adopt any uniform treatment of the wound, except that of applying carbolized oil, and noting the periods of granulation and cicatrization. Occasionally, when it was convenient, I applied serres fines and sometimes introduced stitches. Early, however, in the present year, a puerperal patient, in whom the vaginal orifice had been incised, died eighteen days after delivery from peritonitis. The vulvar incisions were healed at the time of death, and I felt convinced, by watching the case and by the autopsy, that the lining membrane of the uterus was the source of infection; yet I determined thereafter in every case to prevent, if possible, any denuded surfaces, whether caused by laceration or incision, from becoming an avenue for infection. The immediate treatment of the incisions was the main consideration, as, according to Billroth, a granulating surface is not an absorbing one. I first attempted to keep the edges of the wounds together by means of serres fines. These failed to remain adjusted, and since then resort has been had invariably to stitches. After trying catgut sutures, silver wire, and silk, I gave preference to the last. I satisfied myself that by means of silk sutures I obtained more perfect coaptation of the edges of the wounds than by any other means. The stitches did not always secure complete union by the first intention, but they kept the wounds more or less closed until the period of granulation. In working up the literature of the subject, I found an article by Dr. Pallen of New York (before referred to), which had until then escaped my attention, suggesting the closure of the incisions by stitches. This article appeared about the time that they were first used in the Woman's Hospital.

I recognize the objections to episiotomy in private practice, and I appreciate fully the risks to which any genital lesion subjects the patient. Notwithstanding, I consider the operation a safe and justifiable procedure, when the perineum is threatened; and where the danger of deep laceration is imminent, I look upon it as the proper and indispensable means to be used with the hope of meeting that danger, and diverting the risks of labor from what may possibly be a horrid permanent mutilation to a harmless temporary lesion.

I have added reports of the 56 patients, in whom, during labor, resort was had to incisions of the vaginal orifice, and in conclusion I desire to express my gratitude to Dr. A. H Smith, through whose kindness I have been able to consult authorities which would otherwise have been inaccessible.

No. of Case.	Age.	Nativity.	No. of Pregn	Condition of ineum du Labor.	Presentation Position.	Duration of Stage of La	No. of Vulva cisions.	Condition of Perineum after Labor.	Weight of Ch	Occipito-front Diameter.	Bi-parietal Di eter.	Width of Sho ders.	Maximum Ten and	Maximum Pu of Puerperiu	Date of Dischar	Condition on D charge.
									lbs.	cm.	cm.	cm.	degrees		day	
1	23		1st	Rigid	O. L. A.		2	Rupture, not involving the sphincter ani.	7½	12	10	11½	103	108	20th	Well
2	25		1st	"	" " "	1 h 25 m	1	Rupture, 1 cm. in length.	9	13	9	16	100.8	96	20th	"
3	30	Irish	1st	"	" " "	3 h 5 m	2	No rupture.	8	13½	9	15	105.8	120	26th	"
4	36	"	1st	"	O. R. A.	1 h 30 m	1	" "	8	12	10	14	102.9	116	22d	"
5	19	Amer.	1st	"	" " "	1 h 35 m	2	" "	7½	12½	10	15	101.1	112	28th	"
6	25	Irish	1st	"	O. L. A.	8 h 20 m	2	" "	9	13	9	15	102	100	20th	"
7	21	Amer.	1st	"	O. R. A.	1 h 20 m	2	" "	6	11½	9	14	102.5	112	20th	"
8	21	"	1st	"	" " "	1 h 15 m	2	Laceration of the integument.	6	10¼	8½	12	102.1	100	21st	"
9	23	"	1st	"	O. R. P. non-rotat'n		2	No rupture.	8	10½	8½	13	100.2	80	17th	"
10	20	"	1st	"	O. R.		2	" "	6½	9	7	10	101.2	98	16th	"
11	26	English	1st	"	O. L. A.		2	" "	7½	12¼	9	12	99.8	84	21st	"
12	20	Amer.	1st	"	" " "		2	" "	6¾	11	8½	10	101.4	106	21st	"
13	28	German	1st	"	" " "		2	" "	7½	11	8½	10	105	104	18th	"
14	21	Irish	1st	"	" " "	2 h	2	" "	8½	12	10	12	105.2	130	19th	Convalescent
15	23		1st	"	" " "	26 m	2	" "	6½	12	10½	14	101.4	90	19th	Well
16	24	Irish	1st	"	O. R. A.	17 m	2	" "	8¾	13	11	19	100.7	97	22d	"
17	28	"	1st	"	O. L. A.	2 h	2	" "	8	13	10½	13	101.3	98	20th	"
18	26	"	1st	"	" " "		2	" "	7	12¾	9	12½	101.5	128	18th	"
19	18	Amer.	1st	"	" " "	1 h 50 m	2	" "	5	11	9	9	102.1	118	22d	"
20	26	German	2d	"	" " "	17 m	2	" "	8	12	9	9½	101.1	103	20th	"
21	22	Amer.	1st	"	O. L. P.	19 m	2	" "	5	11	8½		101.7	128	46th	"
22	23	Irish	2d	Unyielding on account of cicatrix.	Occiput rotated post'rly	Forceps delivery.	2	Rupture, 3 ctm. in length.	9½	13	10	13	100.5	87	18th	"
23	22	"	1st	Rigid	O. L. A.	1 h 31 m	2	No rupture.	6½	12	9	11	104.3	125	18th	"
24	20	Amer.	1st	"	" " "	5 m	2	" "	8	11	10	12	104.4	101	17th	"
25	22	"	2d	"	" " "	1 h 25 m	2	" "	8½	11½	10	13½	102.9	135	22d	"
26	21	"	1st	"	O. R. P.	12 m	2	Rupture, one-half the length of the perineum.	8½	12	9½	11	103	101	20th	"
27	21	"	1st	"	O. L. A.	28 m	2	No rupture.	8		9	13	103.4	108	19th	"

28	19	Amer.	1st	Rigid.	O. R. P.	1 h 2 m	2	No rupture.	8	12	9½	12	105.7	100	23d	Well
29	36	“	1st	“	Occiput rotated postr'ly	4 h 25 m Forceps delivery.	2	Rupture, not involving the sphincter ani.	7	11½	8½	12	103	120	28th	“
30	28	Irish	1st	“	O. L. A.	1 h 25 m	2	No rupture.	8		9½		104.4	112	27th	“
31	21	Amer.	1st	“	“ “ “	38 m	2	Laceration of the integument, one inch in length	8	11½	10	12	104.7	101	11th	“
32	28	“	1st	“	“ “ “	5 h 28 m	2	No rupture.	7½	11½	9	12	101	103	12th	“
33	21	“	1st	“	“ “ “	46 m	2	“ “	7¾	11	9	10½	105	116	17th	“
34	25	“	1st	“	O. R. A.	2 h 47 m	2	“ “	8	11½	9½	11	100.8	10.	18th	“
35	23	“	1st	“	“ “ “	11 m	2	“ “	8½	12	9¾	12	101.7	102	18th	“
36	26	Irish	1st	“	O. L. A.	5 h 50 m Forceps delivery.	2	“ “	9	11	9	11½	103	106	28th	“
37	22	Amer.	1st	“	“ “ “	27 m	2	“ “	9	11½	9		104	108	18th	“
38	36	Irish	1st	“	O. R. A.	10 h 14 m	2	“ “	10	12	10	10½	106	140	Died of Peritonitis on 18th day.	
39	23	“	1st	“	O. L. A.	1 h 22 m	2	“ “	8	10	9	12	102.2	98	20th	Well
40	18	Amer.	1st	“	“ “ “	1 h 12 m	2	“ “	6½				102	98	18th	“
41	30	Swede	1st	“	O. R. A.	53 m	2	“ “	7½	12½	8½	11	104	100	19th	“
42	20	Amer.	1st	“	O. L. A.	23 m	2	“ “	6½	11	8	8	102.4	98	17th	“
43	27	“	1st	“	“ “ “	1 h 8 m	2	“ “	10		10	12½	105.5	114	19th	“
44	23	“	1st	“	“ “ “	33 m	2	“ “	8½		8½	11	100.3	107	26th	“
45	20	“	1st	“	“ “ “	48 m	2	“ “	8½	12½	11	13	104.8	93	18th	“
46	22	“	1st	“	“ “ “	14 m	2	“ “	8	12	9	11	103.2	100	20th	“
47	26	“	1st	“	O. R. A.	56 m	2	“ “	8	12½	9	12¾	103.2	106	16th	“
48	22	Irish	1st	“	“ “ “	3 h 25 m	2	“ “	7	11½	8½	17	104.6	114	28th	“
49	23	Scotch	1st	“	O. R. P.	3 h 25 m	2	“ “	7	12	9½	13	103	101	17th	“
50	21	German	1st	“	O. L. A.	1 h 6 m	2	“ “	7½	13	12	12	100.8	119	20th	“
51	22	Amer.	1st	“	O. R. A.	2 h 55 m	2	“ “	8	12	9	12½	102	113	22d	“
52	18	“	1st	Unyielding from condylomata	O. L. A.	1 h 47 m	2	Rupture, one-half the length of perineum.	5½	10	9	11½	103	108	18th	“
53	29	Welsh	1st	Rigid	“ “ “	8 h 8 m	2	No rupture.	10	12	9	11½	100.4	84	21st	“
54	36	Irish	7th	Unyielding from cicatrices	O. R. A.			“ “	8½	10¾	8½	12	99.8	80	16th	“
55	30	“	2d	Rigid from cicatrix	O. R. P.	Forceps delivery.	2	“ “	8¼	12	9	12½	102.2	105	21st	“
56	29	German	1st	Rigid	O. L. A.	21 m	2	“ “	8	9½		13	100	89	16th	“

NORMAL POSITION AND MOVEMENTS OF THE UNIMPREGNATED UTERUS.

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(γ.) The vibration movements, while of but little importance in a study of uterine position, become of considerable value as giving a clue to an important and but little understood factor in uterine support. They deserve, therefore, a brief consideration. As the only observations upon these movements were made in connection with the above experiments, we again quote from that paper. In nearly all uterine movements, except in those due to movements of the diaphragm, there is a marked vibration movement apparent in the tracing. This becomes a leading feature in the record of walking movements. Mainly a walking curve results from motion in the mercury of the manometer something like this: As the foot touches the floor in advancing, there is a slight upward movement in the distal side of the instrument equivalent to a descent of the womb; as the opposite foot is raised and advanced, there is a descent in the mercury corresponding to an ascent of the organ. These two movements form the main features of the tracing. But the curve is complicted by angular irregularities, which I cannot explain except that they are due to vibrations. They are more numerous in the upper portion of the tracing which corresponds to the position of equilibrium of the uterus. This coincides with the most reasonable idea of their origin, for it is at the point of least tension that vibrations would naturally take place. Uterine vibration movements are of great variety of extent, some of them nearly equalling the almost perpendicular markings attending the rise and fall of the feet. It is evident that the connective tissue supports are involved in this movement, as will be further established when speaking of uterine supports.

(δ.) The influence of the varying conditions of the bladder upon uterine movement is a much debated matter. To whatever extent the bladder may affect the position of its fellow-organ, it is dependent upon two conditions: (1) vesico-uterine connection, and (2) displacement. The first is maintained by means of the utero-vaginal cellular processes which are extensions of the cellular layer in the vesico-vaginal septum (Savage), and the pelvic reflections of the peritoneum. Carrying our investigations further into the nature of this cellular connection, we learn that it is of very loose structure, made up of strong connective tissue fibres (Pausch); and that the extent of this connection is quite limited, since the upper two-thirds of the uterus is covered by peritoneum that is reflected from the bladder, while of the remaining one-third, but the portio supravaginalis, makes direct connection with the bladder (Hueter). The importance of this vesico-uterine connection is evident from the experiments of Mäunel on the dead subject, who found that, on severing the connection, but a slight force was necessary to dislocate the uterus on the posterior pelvic wall. The extent to which the excavatio vesico-uterina and the fossa paravesicalis exist as actual cavities is under dispute. Some authors describe them as absolute fossæ (Martin, Hueter, Hasse), while really they are relative and dependent on the state of vesical fulness. Savage is undoubtedly right when he says that, where the bladder is "fully contracted, the peritoneal covering is scarcely raised, and forms neither a vesico-pubic nor vesico-uterine fold; these make their appearance only when the upper surface of the bladder rises." On anatomical grounds, then, it is evident that the varying extent of the bladder must exert a considerable influence on the position of the unimpregnated uterus.

Among authors, however, there it a great difference of opinion as to the actual limit of this influence. Martin would restrict the action of the bladder to very large accumulation of urine, and confines the displacing force to the vaginal portion of the uterus, and during the expulsion of urine the cervix moves downward and forward while the bladder is being partially emptied, and then remains stationary during the completion of the process. He dissents emphatically from the statement of Schultze, that in an empty state of the bladder the bi-manual touch shows the uterus to form a right angle to the body. Martin's position is partially sustained by the experiments of Le Gendre on the frozen pelvic section, by which it was shown that the uterus was but slightly pressed backward. It must be observed, however, that its anterior displacement is probably greater in an empty condition of the bladder than in the opposite direction from distention. Hueter admits a normal displacement of 25° to 30° from this cause; while Hasse takes the extreme ground, that bladder distention so forces back the uterus that the intestines are driven out of the Douglas space and admitted into the excavatio vesico-uterina. Aveling gives the bladder great influence as a pathological factor in retroversions; and Schröder believes that in congenital anteflexion and retroflexion the form of the uterus is not attended by the state of the bladder, while with the normal angle it is but slightly affected. Contrary to the opinion of Martin, he limits the uterine movement to the fundus of the organ, the cervix not following the movement to a corresponding degree during the ascent of the bladder wall, and the more flexible the uterus is in the region of the cervix, and the firmer the vagina, the more flexion in a normal manner succeeds anteversion.

The author who has given this interesting question the most careful study is Schultze, and who finds in bladder connection and movement the key to the normal anterior position of the uterus. He regards it as established that, in normal and abnormal positions of the uterus, prolapsus, and forward and backward displacement, the posterior wall of the bladder follows the uterus, "a relation so constant that it may be concluded to exist in every case." "I have," he continues, "established as a matter of fact that, in emptying the bladder, the uterus becomes anteverted or anteflexed, for which I have sought an explanation. The fact is, that when the woman is lying upon the back with the bladder full, we find the uterus in the position represented by Kohlrausch, when we empty the bladder with the catheter—the position of the woman being unchanged—we find the uterus completely anteverted or flexed, contrary to the operation of its own weight. In the upright position the intra-abdominal pressure is increased, and presses the corpus uteri yet further in its existing anteverted position." In another article, the author states that the inference is natural that, in the living woman, the force which tends to restore the uterus to a normal position of anteverted flexion, after evacuation of the bladder, is muscular action.

(*ε*.) The condition of the rectum has less marked effect on uterine movement. The first influence exerted by it upon the uterus is the permanent one due to the usual position of the intestine to the left of the sacrum (Savage); this position leads Prof. Hasse to the conclusion that the uterus is displaced forward, the fundus is somewhat pressed to the right, and thus the long axis of the organ lies obliquely directed forward, and to the right superiorly, and behind and to the left inferiorly. Of course, this obliquity is very slight under any circumstances, and not more than appreciable in a distended state of the rectum. A direct forward displacement of the fundus from rectal distention is more marked, and Martin even gives it pathological significance. From the normal physiological state of the rectum he infers the following movement in the uterus. The movement is inversely that due to the bladder, the organ is pressed forward, somewhat anteverted, and through the stretching of the lig. sacro-uterina slightly elevated. Others are of the opinion that this usual movement is to the right and forward—an anteversion (Piachaud, Cusco), while Hueter regards uterine movement from this cause as so slight as not to merit much attention.

(*c*.) In the ligaments of the uterus—if we regard them in a measure as antagonistic in their office—we must look for a twofold action: (1.) the first as a means of support, or as inhibitory to uterine movement, and (2.) as a cause of motion.

Before turning our attention to the ligaments, it will serve a useful purpose to examine into a somewhat disputed matter, namely:

(1.) The presence and effect of intestines in the Douglas space. It may be regarded as a fact that, in considerable expansions of the rectum and bladder, the extent of uterine surface exposed to the contact of the small intestines is more limited than in the empty state of those organs; and as the posterior wall of the uterus shows a much larger expansion covered by peritoneum than the anterior, it is apparent that the posterior wall is more completely enveloped by links of small intestines than the opposite surface. The views of Claudius, that the uterus with the broad ligaments and the ovaries lie against the posterior wall of the pelvis, leads him to the conclusion that in the normal condition loops of intestines are never found between the uterus and the posterior pelvic wall, and in which statement he is supported by Pirogoff, Le Gendre, and Tungel (Martin). Pirogoff, in his work, "Anatomia topographica sectionibus per corpus humanum congelatum illustrata. Petropoli, 1859," Fasc. III., Tab. 30, Fig. 13, gives an illustration in which loops of intestines are represented between the uterine fundus and the sacrum. At the same time he remarks in text, p. 90: "Saccus cæcus plicæ peritonæi recto-uterinæ ansam intesteni contenens." Israel explains the presence of the intestines in the Douglas space, in the illustration of Pirogoff, as being due to the effect of emaciation, which explanation is adopted by Hueter. The latter claims that the absence of intestines in the recto-uterine cul-de-sac is in general undisputed. "If it were," he observes, "a frequent occurrence that the small intestines occupied the posterior cul-de-sac, the finger in exploring the vagina ought to detect the sound of intestines behind the vaginal portion, a condition that the author never observed."

On the other hand, Prof. Hasse states that, in the erect position of the woman, the intestines are always present in that situation, and are expelled by the fundus uteri gravitating backward when the woman lies upon the back. Schröder states that the intestines are present under all positions, and are driven out after death by distention with gas, and thus permits the fundus to drop backward. Schultze gives considerable importance to this in the study of pelvic dynamics. The presence or absence of the intestines in this situation is the result of law and not of accident, and that in the act of emptying the bladder or rectum the uterus and intestines move quickly, in order to fill the space thus made vacant. Therefore, the intestines are or are not present in the recto-uterine space, according to the varying states of vesical or rectal fulness.

The manner in which the intestines, either in the Douglas space or over the fundus, and anteriorly to it act as an agent in sustaining the position of the uterus is evident. They present a means of obstruction to uterine movements that otherwise would be very liable to occur, and are thus prevented or retarded. Säxinger believes that one cause of the normal anteverted position of the uterus is due to the pressure of the intestines posterior to the organ. Martin states that the presence of the small intestines between the forward uterine wall and the bladder operate partly in pressing the ligamenta lata downward in the form of a concave bow on the wall of the pelvis, thus putting it upon the stretch, and securing the uterus against lateral movement. We may say, then, of the action of the intestines, that they tend to secure the uterus against sudden movement, passively and mechanically, and are therefore subsidiary to other and more active means of support.

(2.) Judging from its anatomical relations, the ligamenta rotunda have an important action in defining uterine position and movement. Prof. Lieberkühn, of Marburg, at the request of Martin, made a careful histological examination, the result of which he communicated to the latter. The ligaments are made up of smooth and striped muscular fibres with a connective-tissue envelope. The smooth fibres coalesce with the outer longitudinal layers of the uterus on the anterior and posterior part of the fundus; the striped fibres, beginning at an uncertain point, mingle with the smooth fibres, and are inserted at three points by tendonous and fleshy terminations: (1.) in the aponeuroses of the internal oblique close to the pubes; (2) on the upper and under sides of the outer ring; (3) the smooth fibres, after passing through the inguinal ring, are inserted a connective-tissue filaments in the connective tissue of the mons veneris, part separating and entering the periostium of the os pubis, and part to the fascia pectinea. It is supplied with blood-vessels and nerves. It is therefore histologically the most important of the ligaments. Martin alleges that these ligaments perform an active part in uterine movement by means of their striped muscular fibres. They raise the fundus of the uterus forward, drawing it toward the pubes, which act is supposed to be of importance in putting the uterus in a favorable position for the admission of semen in a fruitful coitus. Rainey alleges that at the third month of pregnancy their strength is increased to that of the little finger.

Hueter states that, after severing the round ligaments in the dead subject, the uterus remains fixed in its position, which is contrary to the opinion of their importance generally entertained. Their apparent effect is described by Klob. They permit, by their relaxation and contraction, in some measure, a rising and sinking of the uterus, and at the same time an approach of the fundus to the symphysis pubis, while a considerable escape of the fundus backward is opposed. But as these ligaments run in an upward and outward convex curve, the uterus may make a considerable change in position without drawing upon the ligaments until the curve is stretched. Nevertheless he holds that it is established that these ligaments assist in securing the uterus, and to be considered as "nichts als die blossen Reste der Gubernacula Hunteri." Hueter offers the suggestion that these ligaments are available as a means of support to the uterus, only so long as they are not stretched, believing, with the author last quoted, that when they are extended by the enlargement of the uterus from pregnancy, they never recover their former power of preventing extensive backward movements, or to lift the fundus forward.

The theoretical correctness of the above explanation was confirmed by Spiegelberg, who had an opportunity, in the year 1859, to examine the action of these parts under the effect of electrical stimulus in a young woman who was decapitated. The uterus and its annexes were placed in the circuit fifteen minutes after death ; on passing the induced current directly through the uterus, the fundus was raised from the pubes, forcing the organ lower in the pelvis, and placing the round ligaments on the stretch, and then showed a tendency to draw the fundus forward.

We may conclude that in minor uterine movement these ligaments exert no inhibitory power, and that they exist as a sort of reserve support in the varying phases of the physiological evolution of the organ. In the unimpregnated uterus the function of these ligaments is brought into play only during excessive uterine dislocations, unless, as Martin suggests, they perform a part in the sexual act.

(3.) Of really less importance than any other uterine annex, so far as movement is concerned, are the broad ligaments; on this there is general agreement. These ligaments are furnished with numerous elastic and muscular fibres, which radiate over the superficial layers of the uterus from between the folds of the peritoneum (Rouget, Martin, Richet, Luschka). Martin believes that, so far as relates to uterine errors of position, these ligaments are not of great importance. Richet concludes, from the result of his experiments on the cadaver, that division of the broad ligaments promotes retroflexion. This is of value only in those cases in which the tissues of the uterus are greatly relaxed. Mannel, in his experiments on the cadaver, found that the uterus remained upright after division of these ligaments. Hueter states that the manifest contractions of the broad ligaments prevent, in a certain degree, departure of the uterus from the upright position to the right or left, and oppose but slight resistance to backward or forward movements.

(4.) The ligamenta pubo-vesico uterina (Hyrtl)—lig. uterovesicalia, plicæ vesico-uterinæ—are small fold-like prominences of the peritoneum, which bound the shallow excavatio vesicouterina, and are reinforced by means of fibrous processes (Klob) of pelvic connective tissue from the os pubis, and which, passing both sides of the bladder, are inserted in the uterus at the junction of the uterine body with the uterine neck. These ligaments are not very strong (Hueter). Luschka has found in them smooth muscular fibres which can be traced to the superficial layers of uterine muscular fibres. The evident action of these ligaments is to retard any considerable dislocation of the uterus backward, and at the same time any strong depression of the fundus forward. This is Hueter's view, but it is difficult to credit this action of the ligaments when we take into consideration the admitted point of insertion at the union of the cervix with the uterine body. The fundus is left free to undergo movements not participated in by the cervix, and, therefore, it is necessary to assume that the self-sustaining qualities of the uterus become a factor in the action of these ligaments described by Hueter. Theoretically, we may regard it as opposing forward depression of the fundus, by giving the uterus a certain degree of forward fixation, assuming a normal resistance of tissue at the isthmus uteri. Prof. Frankenhäuser regards these ligaments of great importance as uterine supports; while Martin adopts the generally accepted view that they are of but little value.

(5.) The duplication of the peritoneum in the recto-uterine pouch gives occasion to small fold-like prominences of peritoneum which bound the space on every side. These folds are reinforced by means ot fibrous processes of pelvic connective tissue (Klob), and which are described as passing from the sacrum on both sides of the rectum in concave bows to a junction on the posterior surface of the uterine neck. This is usually called the sacro-uterine ligament, or the musculus retractor uteri (Luschka); lig. utero-lombaires (Huguier); lig. utero-sacralia (Boivin and Dugès); lig. sacro-uterina; plicæ semilunares Douglasi; plicæ recto-uterinæ. Luschka describes it as composed of organized muscular fibres in addition to connective tissue. Schröder says that muscular fibres are very scarce. This ligament is apparent in the new-born, and may be rendered evident by drawing the rectum upward. In the adult dead subject, particularly those who have born children, the ligament is found in great variety of development. In some the surface is found with scarcely a trace of the peritoneal fold; and in others it is very prominent (Martin). Its bony attachment is a matter of dispute. Luschka alleges that it is attached to the second sacral vertebra, while Huguier says that it is attached to the lateral surface of the last lumbar vertebra. The function of the sacro-uterine ligament is also in dispute. Martin believes that it is of no small importance in defining uterine position; others, that it holds the uterus in its relative position in the cavity of the pelvis (Savage, Malgaigne). Many authors, reasoning from the evidence furnished by the dead subject, state that the ligament prevents to a certain extent, or is the chief obstacle to, prolapsus of the uterus (Hergott, Richet, Bastien, Le Gendre). Hueter states that it retards any considerable dislocation of the cervix forward, and consequently any corresponding escape of the fundus backward. The circumstance that the ligament is placed upon the stretch by a strong distention of the rectum, has led Klob to the conclusion that one of its offices is to prevent an otherwise inevitable pressure of the cervix upon the bladder, and by placing this restraint upon the forward movement of the cervix, causes the rectum to develop laterally.

Schultze takes the ground that the normal anteversion of the uterus is in a measure caused by it. Pansch has shown that the direction of its fibres are such as not to cause the movement of the uterus to any extent; that the fibres do not run so directly from the cervix backward as from below upward; that it exerts but little traction until its concave bows are partly obliterated, and that its power is greatly weakened by having no bony connection, its fibres being lost in connective tissue. In this opinion of its office Schröder coincides. To the foregoing it may be added that many authors deny this part any office as a ligament, and hold that it is a fold of the peritoneum developed by the downward traction of the uterus (Martin).

The balance of evidence is in favor of the value of the sacro-uterine ligament as a direct support of the uterus. Considered in its relations to other ligaments, we must also assign it value as an antagonist to the pubo-vesico-uterine ligament. It is difficult to agree with Klob that it antagonizes the round ligaments, since the sacro-uterine ligament retards any considerable dislocation of the cervix forward, and consequently of the fundus backward—an action, so far as the fundus of the organ is concerned, that is generally ascribed to the round ligaments. The action of the ligamenta pubo-vesico-uterina and the sacro-uterina is directly opposed. The former is known to be very much weaker than the latter, so that it would be overpowered, were it not for the considerable extent of connection between the cervix and the bladder. The idea of antagonism in the action of the various uterine supports must be accepted in a very modified manner. All speculation as to the antagonistic action of the ligaments is confronted by the fact that, with the exception of the round ligaments, all the so-called uterine supports are attached to the cervix and not to the uterus proper, and that consequently, to use the illustration of the long bones, its flexions cause extension, and its extensions, flexions; and further, that we cannot regard any set of ligaments as able to hold the uterus in a given direction contrary to the action of opposing ligaments.

(6.) It seems proper, in view of their mode of operation, to consider the (1) vagina, the (2) pelvic connective tissue, and (3) the levator ani muscle connectedly as a means of uterine support. These parts contribute more or less directly to give the uterus a definite position. The action of the vagina and levator ani muscle, the latter by securing the vagina, and the former by securing the uterus, afford considerable support. It is difficult to agree with Mathews Duncan that the vagina is the chief means of uterine suspension ; or with Martin, on the other hand, that it affords the organ no measure of support. The vagina is, however, a means of support, not from its inherent qualities, but that it shares with the uterus its own means of support. This is the pelvic connective tissue. By far the best description of this important tissue constituent of the pelvis is given by Savage. He makes the cellular tissue contribute directly to the support of the entire pelvic contents, with special processes for uterine support. "The pubo-sacral cellular process attends the urethro-vesico-vagino-uterine chain of venous plexuses, and forms a part of the utero-iliac cellular process, in the same way accompanies the uterine vessels, forming a resisting fibro-cellular bond between the uterus and the sacro-iliac articulation." The measure of movement allowed the uterus by its pelvic-cellular tissue supports is furnished by the tracings or uterine vibration movements to which former reference was made in this connection. The slight upward and downward movements in walking, and various other bodily actions, while too small to elicit any resistance from the ligaments proper, encounter the opposition of the cellular uterine connections. The downward movements record the limit of essential elasticity ; the restriction of upward movement, due to recoil, being probably an expression of the same force.

C. Conclusions.

With the accumulated evidence of observers, and with that furnished by a study of the uterus and its attachments now before us, we are justified in expressing something like positiveness in the conclusions relating to uterine position and movement.

(*a.*) The most obvious conclusion is that the anatomical idea of coincidence between the uterine and pelvic axes, maintained with more or less relative exactness, is obsolete.

(*b.*) The evidence also establishes the fact that the uterus has, with relation to its neighboring organs, no definite position. With these conclusions disappear the dogmas of older gynecology.

(*c.*) Instead we have the fact that uterine position must be defined as one of uterine movement.

(*d.*) These movements are not the effect of chance or of accident, but are the results of certain definite forces and counter-forces acting in fixed directions. While, however, the uterus cannot be assigned a position typical of the normal unimpregnated organ, its range of movements is generally anterior to the pelvic axis; hence the theory of the normalcy of anteversion or flexion. The round ligaments, the ligamentous and cellular vesico-pubic attachments of the uterus, and the general direction of the superior strait in normal conditions of the lumbar curve, are the principal forces that produce this normal anterior position. These forces may also be defined as antagonists of vesical distention. To this source is due one

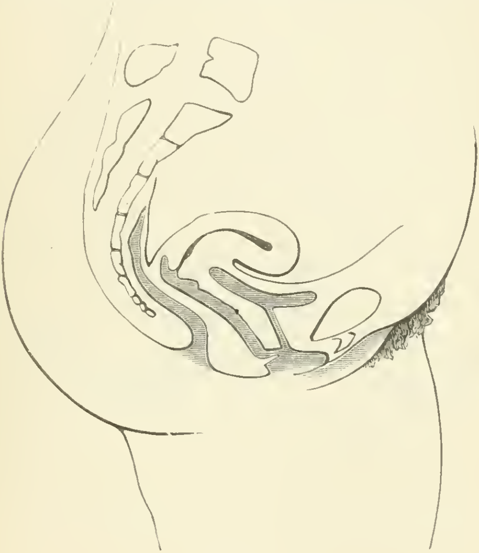

FIG. 1.

of the most extended and regular uterine movements. Between the positions of the uterus in an empty and in a full state of the bladder there is a difference of 20° to 30°. Inversely and to a minor degree the collapsed or full state of the rectum induces uterine movement, but only when the fundus is sufficently erect to impinge upon the anterior rectal wall, otherwise the displacing force is confined to the cervix.

(*e.*) The posture of the body induces uterine movement either passively, as in gravitation of the uterus away from the vulva during the night, or actively, as in various bodily movements. The act of respiration in its various degrees, the force of the abdominal muscles, as in voluntary or involuntary expulsive effort, cause changes of uterine position mainly in the direction of the long axis of the organ.

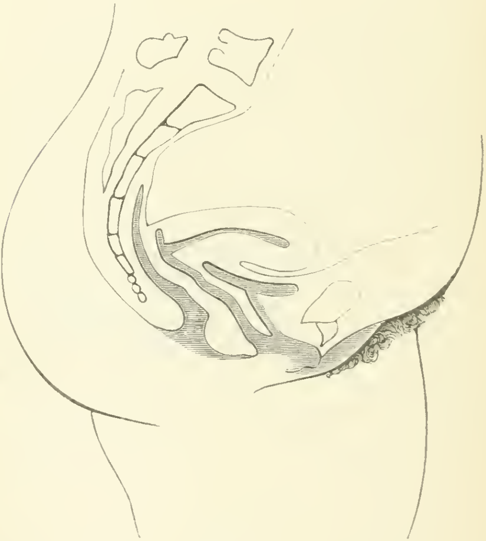

Fig. 2.

(*f.*) We must also regard the uterine ligaments as the seat of motor influences; anteriorly acted upon by the round ligaments, the pubo-vesico-uterine ligaments and the vesico-uterine attachments which have the functions of ligaments; posteriorly by the sacro-uterine ligament and the occupancy of the recto-uterine pouch to a constantly varying degree by links of intestines.

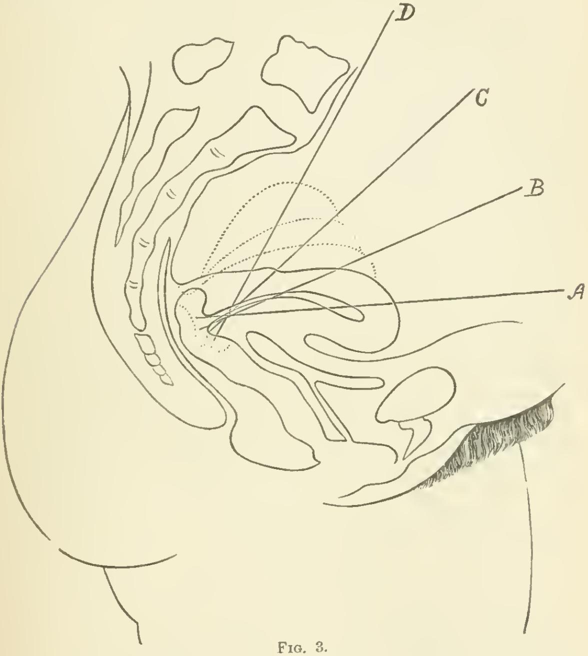

Fig. 3.

(*g.*) Antagonizing these forces and counterforces, we perceive but one normal force in the direction of fixation, namely, the pelvic cellular tissue with its more or less condensed utero-pelvic processes.

As the latest results of a careful study of one phase of uterine position, we have reproduced the figures of Schultze, copied from the Archiv für Gynaekologie, vol. viii., 1875. Fig. 1 represents the position of the virgin uterus with its anterior curvature in an empty state of both bladder and rectum. Fig. 2 gives the form and position of the child-bearing uterus under the same conditions.

We have adopted Fig. 2 as the initial position of a series of normal uterine movements, represented in Fig. 3. It represents the constantly varying phases of uterine position induced by the action of the bladder, the rectum, the ligaments and bodily posture, intra-abdominal pressure. Figure 3 is designed to illustrate certain inevitable changes in position of the uterus due to the elevation of the fundus. The initial point is taken in the strong normal anteversion existing during a complete bladder collapse indicated by the line *A*. It has been shown that the bladder is able to raise the uterus through the angles expressed by the lines *B* and *C*. The line *D* is believed to express ideally the limit of the normal range of movements of the organ, of which postural changes may be the factor, complicated by visceral distribution and pressure.

We are obliged to admit that this process of partial revolution of the organ is performed under the operation of mechanical laws: hence, the fundus revolving on an unfixed centre, we have at the cervix a point that becomes depressed just in proportion to the elevation of the fundus. Since we cannot conceive of Aran's idea of an "axe suspenseur" as a fixed point, or that the organ becomes elevated throughout its mass, our assumption is ideally correct. The dotted lines at the cervix indicate approximately the depression of the uterus when elevated to correspond to the line *D*.

LITERATURE.

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REPORT OF TWO THOUSAND CASES OF DISEASE IN CHILDREN, TREATED AT THE DEMILT DISPENSARY, NEW YORK, WITH NOTES.

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(Concluded from April Number, p. 291.)

I CANNOT pause to speak particularly of the important subject of diet; but will merely say, in passing, that, after a very extended experience with its use, I have gained constantly increasing confidence in condensed milk for infants and young children, either wholly or in part artificially fed; though there is, of course, no one article which will be found adapted to all cases. It can be diluted to any amount desired, and limewater, salicylic acid, or spirits can easily be given with it if indicated. In the way of drugs, I usually commence my treatment of diarrhœa, whether acute or more or less chronic, with an emulsion of castor-oil (a drachm of the oil to the ounce of water) made with gum-arabic, and to which a little paregoric and oil of anise are added. In many cases this, in connection with a regulated diet, cleanliness, fresh air, and attention to the nursing-bottle, if the child is artificially fed, will be all the treatment that is required. When vomiting is present, it often seems to aid in controlling that as well as the diarrhœa; though I sometimes order ipecacuanha in addition. If no improvement should be noted under its use, I then resort to bismuth, the alkalies, pepsine, opiates, or astringents, singly or in combination, according to the peculiar circumstances of the case. A combination of bicarbonate of soda, subnitrate of bismuth, and Dover's powder, given in powders, has proved of very great service in my hands. I am in the habit of early resorting to stimulation in appropriate cases, and have found wine of pepsin (half a teaspoonful to a teaspoonful) with bismuth (three to five grains to the dose), as used to a large extent by Dr. Dawson, a very excellent prescription; though more powerful stimulus is not infrequently required.

(20.) *Diphtheria.*—The number of cases of diphtheria seen by me during the past year has been very much less than for several years preceding. I have no notes of any value in regard to them, for the reason that, after once prescribing for such cases, I have invariably requested the mother to send for the district physician as soon as the medicine then ordered was gone, or earlier, if the child should grow worse, as I regarded it as unsafe to have such patients brought back to the Dispensary. Notwithstanding the apparent identity in the membranes in croup and diphtheria, my experience has led me to conclude that the affections themselves are not by any means identical; but I do not propose to enter into the discussion of the subject here.

(21.) *Eczema.*—Internally I have almost invariably made use of either cod-liver oil and iodide of iron, or else of arsenic, in the treatment of this exceedingly common affection; and the results of my cases will, I think, compare favorably with those obtained by most other observers. As a local application, I have usually employed the oxide of zinc ointment so generally used (having powdered camphor or chloral rubbed up with it in cases where there was much itching); but in some instances I have found the combination of tannic acid with stramonium ointment (a drachm to the ounce), recommended by J. Lewis Smith, of more service.

(22.) *Empyema.*—This was a well-marked case occurring in a child three years old. I proposed to perform paracentesis thoracis; but the parents were unwilling to give their consent to any operative procedure. The subsequent history of the case is unknown.

(23.) *Furuncles.*—According to my experience, furuncles in children are usually dependent on some disorder of the alimentary canal, though occasionally they are found in cachectic states of the system, where there is no special trouble of this kind. Quite a large proportion of the cases occurred in connection with entero-colitis, and when the diarrhœal affection was cured, they also quickly disappeared. In other cases they seemed to be dependent on some other disorders of digestion, and in such I usually found the following prescription, which used to be much in vogue in the out-door service of the Children's Hospital, Philadelphia, when I attended there as a medical student, to act most efficiently in ridding the system of them:

℞ Sodii bicarb.................... ʒ ss.–ʒ iss.
Syr. rhei aromat.,
Tinct. colombæ.................. āā fl. ℥ i.

S. Teaspoonful three times a day to a child of two years. I have had no occasion to employ the hyposulphite of soda, which Dr. Buckley and others have found so useful in checking the new-formation of boils.

(24.) *Hæmoptysis.*—This occurred in a girl eleven years of age, whose general health was considerably depreciated, but who had very little cough, and in whom I could detect no disease in the lungs. She seemed, however, to have slight pleuritic trouble on one side, and to this the hæmoptysis was probably due, as far as I was able to make out. She was placed upon cod-liver oil and iron, but as she still continued to bring up a little blood from time to time, I ordered a teaspoonful of Squibb's fluid extract of ergot three times a day. This was well borne by the stomach, and after she commenced taking it, she had no more hæmoptysis. Later I put her on the cod-liver oil and iron again, and when I last saw her she appeared much stronger and better in every way.

(25.) *Valvular Disease of Heart.*—Doubtless there were other cases of this character, but they escaped detection, as in them my attention was not especially called to the heart.

(26.) *Hydrocephalus.*—Both cases occurred in rachitical children, if I remember rightly, and neither of them remained very long under observation. A very interesting case of hydrocephalus in a syphilitic infant, in which complete recovery took place under anti-syphilitic and tonic treatment, was brought to the Dispensary a short time before the commencement of the period embraced in these notes. It will be found reported at considerable length in the *New York Medical Journal* for November, 1877, among the Clinical Reports of the Demilt Dispensary.

(27.) *Icterus.*—None of the cases were of the form of *icterus neonatorum*, as, of course, such young infants as those in which this occurs are never brought to the dispensary.[*] There was one case, however, in which the jaundice had existed at birth, and was found still present in a very marked form at the time the child was first presented, when it was three and a half months old. I was at first afraid that it was due to some congenital deficiency of the biliary ducts, and considered the case almost a hopeless one ; but, to my surprise, the infant steadily improved in general health under appropriate treatment, though the jaundice persisted to a greater or less extent for three months after it was commenced. By the end of that time all vestiges of it had almost entirely disappeared (though marked symptoms of rachitis had in the mean while become developed), so that I came to the conclusion that there had probably been originally a congestion of the duodenal mucous membrane or the biliary passages (or, perhaps, both), which had resulted in a subacute catarrhal condition. This case, like the last one, will be found detailed in the report alluded to in the *New York Medical Journal.* All of the other cases seemed to be of the same general character, though there was no diarrhœa in any of them, if my memory serves me, and none of them were of very long continuance. The treatment was usually with calomel or alkalies, and sometimes both. In one case the yellow discoloration of the skin and conjunctiva lasted only two or three days, while the clay-colored stools persisted for as many weeks.

(28.) *Indigestion.*—Like Meigs and Pepper, I use this term to signify morbid conditions of the digestive function which were supposed to be the result of functional disorder, or of mild, acute, or chronic catarrh of the stomach. Some of the cases are characterized by constipation, and some by slight diarrhœa. Vomiting, furuncles, and follicular stomatitis or aphthæ, were noted in a certain proportion of cases, and in one patient there was an eruption of lichen, due, apparently, to the disorder of digestion. Some of the most aggravated cases were in children suffering from hereditary syphilis. One of the most frequent causes of indigestion in young infants, as is well known, is over-feeding, either by the breast or the bottle, and after due attention has been paid to this and other points in connection with the diet, I know of no agent of such wide applicability as the old "soda-mint" carminative, which has certainly stood the test of time.

(29.) *Meningitis.*—The case of cerebro-spinal fever occurred in a girl of seven years, previously healthy. During the three weeks preceding the date at which she was brought to the Dispensary, she had been attended by two physicians, neither of whom, according to the mother's account, had been able to arrive at any diagnosis. It is true that most of the symptoms were very obscure, but my past experience with this affection, so protean in its manifestations, enabled me to recognize the true nature of the case. I afterwards attended the child in her own home, and at the end of ten days she died in a state of profound coma. No autopsy was permitted. The treatment consisted of ice-applications, vesication by cantharidal collodion behind the ears, ergot, iodide and bromide of potassium, and stimulus. The case of tubercular meningitis occurred in a scrofulous child two years old, and at the time I saw it there was also marked jaundice present. (It is not included in the cases of jaundice previously reported.) I ordered two doses of calomel and half a drachm of Squibb's fluid extract of ergot every three hours afterward, but never saw the child again. It doubtless did not survive very long.

(30.) *Pemphigus.*—One of the cases was of syphilitic origin and will be referred to more particularly a little further on.

The other two were undoubted cases of acute pemphigus, which Prof. Jacobi says[1] is such a rare affection that its existence is doubted by such an experienced observer as Hebra, who asserts that he has never seen a case amongst a million of patients. It would certainly seem, therefore, that it cannot be so extremely rare in this country as in Europe. My two cases occurred in a boy and girl, aged respectively two and a half and four years, the systems of both of whom were in an anæmic and debilitated state. In neither of them was there such marked constitutional disturbance as in the case seen by Prof. Jacobi in consultation with Dr. Chabert, of Hoboken,[2] and both of them recovered under tonic treatment. Dr. Jacobi regards the affection as a neurosis, and recommends the constant administration of quinine and ergotine for it.

(31.) *Pertussis.*—I have already written so much on the subject of the treatment of whooping-cough,[3] that I will dwell very briefly upon it here. In the *Virginia Medical Monthly* for August last, appeared a "Report on the Experimental Use of Amyl Nitrite in ten Cases of Pertussis," by George Bayles, M.D., which was read before the Medical Society of the State of New York, June 20th, 1877. Although I have been very anxious to make trial of this new method of treatment, which my friend, Dr. Bayles, has found so serviceable, I confess that I have been altogether afraid to intrust such an agent as the nitrite of amyl to the hands of the class of persons who are in the habit of frequenting our dispensaries, lest some serious accident should occur from its abuse. Since last summer, whooping-cough has not been at all prevalent in New York, and I have not had a single case of it in my private practice; so that I have had as yet no opportunity of testing the agent in this affection. During the last year I have relied mainly on chloral-hydrate and quinine, and have continued to obtain very excellent results with them; using sometimes one, sometimes the other, and sometimes the two together. I have now for the most part abandoned the use of castanea vesca, since, as I have elsewhere stated, I have found it less reliable, as a rule, than the other two agents. I have to add to the list of those previously reported by me two cases in which chloral seemed to exert a distinctly abortive influence in the disease. In both, the other children of the family had well-marked pertussis, while in the patients referred to, the catarrhal stage had commenced. Of course, in a matter of this kind, it is impossible to speak with absolute positiveness, since it cannot be demonstrated with certainty that the cough would have become paroxysmal; but the probabilities are all to the effect that it would have done so. In three cases, where the paroxysmal stage was fully formed, and the violence of the paroxysms was most marked, the children never whooped but once or twice after the administration of chloral; which, however, was kept up for some time by way of precaution. All the three cases were carefully followed up, and in neither of them was there ever any return of the paroxysms. In one case, in which there were marked cerebral congestion and threatened convulsions, bromide of potassium acted very satisfactorily. In two of the cases, simple diarrhœa, and in three entero-colitis complicated the whooping-cough. All of these children were under one year old.

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[1] "On Masturbation and Hysteria in Young Children," by A. Jacobi, M.D., AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN, February and June, 1876. [2] *Ibid.*

[3] See the *New York Medical Journal* for August, 1872, August, 1873, October, 1876, and March, 1877.

(32.) *Phthisis.*—In one of the cases (aged nine years), the diagnosis of miliary tuberculosis was made, and in the other (aged two years and three months), pneumonic phthisis.

(33.) *Pleurisy.*—The reader will at once be struck with the very small number of cases of this affection noted; but I have not the slightest doubt that there were a considerable number of others which escaped detection. My experience has led me to believe that pleuritic effusion in young children is very frequently a comparatively trifling disorder, which is liable to escape notice; though it is probable that its results may sometimes be the cause of future thoracic trouble. At the Dispensary, too, it is impossible, for lack of time, to make physical explorations, in all the ordinary cases of bronchial catarrh, in which there is little or no febrile reaction, or other symptom to excite suspicion of more serious difficulty. In the *British Medical Journal* for August 25th, 1877, will be found an abstract of a very valuable paper, written by Dr. Thomas Barlow and Mr. R. W. Parker, and read at the late meeting of the

British Medical Association at Manchester, in which the authors speak particularly, among other points, of the difficulties of diagnosis between pleuritic effusion and other chest affections, and between serous and purulent effusions. These observers conclude that the variation in the classical signs and symptoms is so great that, in many instances, the diagnosis cannot be cleared up without exploratory punctures, and recommend the use of the hypodermic syringe in every case of doubtful dulness in the pulmonary regions. They lay great stress on the fact that, in children, extreme retraction of one side of the chest is compatible with the existence of both serous and purulent collections in the pleura of that side; and believe the old teaching, that the passing of a serous into a purulent effusion can be discriminated by the onset of hectic, to be incorrect. Clubbing of the finger-ends, however, they have never seen with simple serous effusion; while they have seldom seen a case of empyema without it.[1] My treatment of serous effusion is very simple; usually consisting of the administration of iodide of potassium with some simple syrup, like that of tolu, internally, and the external application of a warmingplaster. The cases of pleuro-pneumonia occurred in children eleven and five years old respectively. In one of the cases of chronic bronchitis also (the child being nine years of age), there seemed to be evidences of an old attack of pleuro-pneumonia originally.

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[1] Since completing this paper, I have had the opportunity of making an autopsy which offered some points of interest, in connection with the researches of Barlow and Parker. The child upon whom it was made was fifteen months old. I saw it only once while living, and that was just two days before its death. The history obtained from the mother was one of entero-colitis, of about five months' duration, and of some inflammatory affection of the chest of three months' duration. Without going into details, I will state that I found great dyspnœa, and a high temperature present, with complete flatness on percussion all over both sides of the chest. Though there was not the slightest bulging of the intercostal spaces (but, on the contrary, considerable retraction) on both sides, I was led to suspect the presence of effusion in one or both pleuræ (and perhaps empyema), in addition to subacute or chronic pulmonary consolidation. Accordingly, this was the diagnosis I made, and at the autopsy I found the following state of affairs in the thorax. The right pleura was thickened to an enormous extent throughout, and everywhere bound down by firm adhesions, but contained no fluid; while the lung itself was in a state of complete inflammatory solidification, which seemed to have been of considerable standing. No part of it floated in water. The right pleura, on the other hand, was not thickened, and contained quite a large effusion of perfectly clear serum, which was probably of recent origin. This lung was also consolidated, though the hepatization was not so marked as in the other, since pieces taken from almost every part of it floated, though so low that no portion of them rose above the surface. The equal dulness on the two sides of the chest was thus satisfactorily explained, notwithstanding the fact that the conditions found on the two sides were different.

(34.) *Pneumonia.*—This paper has already become so much longer than I had intended, that I cannot dwell upon this common and interesting affection of childhood. Doubtless a considerable number of the lighter cases of it, combined with bronchitis, have also escaped my notice at the Dispensary. In the treatment I have generally found of the most service a combination of quinine, nitrate of potassium, and Dover's powder, given three times a day in the form of a powder, in milk to infants, and in honey or syrup to older children. External applications to the chest may or may not be required, according to circumstances.

(35.) *Prolapse of Rectum.*—In all the cases, I believe, this occurred in children who were suffering at the time they were seen, or had previously suffered, from diarrhœa of some standing. In some, the cure of the intestinal trouble and the improvement of the general health, together with the replacement of the bowel every time that it protruded from the anus, were sufficient to remove the difficulty, but in others it was necessary to resort to local measures, of which I have found injections of fluid extract of ergot, more or less diluted, the most efficient.

(36.) *Rachitis.*—The number of cases of this affection noted (about five per cent of the whole number of children) falls, I believe, very far short of the actual number that could be found among them if they were more carefully investigated. It was while an interne of the Philadelphia Hospital that my attention was first directed to the exceedingly wide prevalence of rachitis, particularly among the lower classes, and the importance of recognizing and treating it, by the late Dr. Parry, who has written the best treatise upon it that we have, and who was then pursuing his studies in connection with it in the nursery wards of that institution. I have no time here to go into its various causes; but one of the most frequent of all (and in this my experience coincides with that of other observers) I have found to be improper alimentation, and especially the giving of starchy foods to infants (both those at the breast and those who are wholly artificially fed) who are entirely unable to digest them. In the treatment, aside from the regulation of the diet and the improvement of the hygienic conditions of the child (which are, of course, matters of vital importance), there are no remedies which, in my opinion, are to be compared to cod-liver oil and the syrup of the iodide of iron. They should be intermitted from time to time, and especially if diarrhœa occurs, as it not infrequently does in rachitis. Where they are not well borne (and such cases are according to my experience very rare exceptions), an emulsion of cod-liver oil with bitter almonds, to which the hypophosphites of lime and soda are added, will often be found an excellent substitute; and it has the advantage of usually not affecting the bowels unfavorably when diarrhœa is present. In a clinical lecture on rachitis reported in the *Hospital Gazette* for September, 1877, Prof. Wm. Goodell, of Philadelphia, states that twenty drops of cod-liver oil is all that should be given at one time to young children, on the ground that, if the dose is any larger, it will not be absorbed, passing through the system unchanged, and causing purging and derangement of digestion. I have probably now given it to some thousands of children in teaspoonful doses (half a teaspoonful if the infant is very young), and have very seldom indeed found it to produce these effects; and since reading the above-mentioned report, I have taken the trouble to have the alvine evacuations of children who were taking it examined, and in not a single instance has the presence of any of the oil been noted. This must, then, be the comparatively rare exception, rather than the general rule. I regard cod-liver oil quite as much as a food as a medicine, and think we should not, therefore, be too sparing in the use of it.

In a clinical lecture published in the *Moniteur Thérapeutique*, August 7th, 1876, M. Jules Simon states that iodine is very injurious to young children, and that neither iodide of potassium or iodide of iron should be given to children under two years of age, except perhaps in cases of acute hereditary syphilis, where small doses may be administered. This, so far as I am aware, is contrary to the teachings of all other authorities, and further investigations will be demanded to show the evil results of its use before the mass of the profession will be willing to give up this agent, which has hitherto been supposed to be of such service in rachitis and other allied affections.

(37.) *Rheumatism.*—Acute articular rheumatism, as has been so often remarked, is probably of frequent occurrence in young children, but in them the symptoms are so very much less marked than in the adult that the affection almost invariably escapes notice entirely. Still, it is not at all uncommon for it to be followed by the most serious organic trouble of the heart.

(38.) *Congenital Syphilis.*—The manifestations of hereditary syphilis were, as usual, not a little varied in character. One of the most marked cases was that in which the pemphigus occurred to which allusion has been previously made. It was very evident, when the mother first presented the child, that she was syphilitic herself, for on her face and arms the remains of a copper-colored papular syphilide, for which she said she had been under treatment, were still plainly visible. In this case the most careless observer could scarcely have failed to be struck with the appearance and expression of the infant's face, which in congenital syphilis has been so frequently compared to that of a little old man. It was six or seven weeks old at the time it was first brought to the Dispensary, and though the bullæ had then entirely disappeared, there could be no doubt that it had recently been affected with pemphigus. The skin was noticed to be mottled in appearance, and at certain points there were blotches of a violet hue which were the last vestiges of the eruption. The mother gave an accurate description of the appearance of the bullæ, and said they came out a week or two after birth. The eruption covered the palms of the hands and soles of the feet, as well as the greater part of the whole body, and continued for three or four weeks. At the time I first saw it, the child was suffering from well-marked coryza, which had excoriated the upper lip and caused the formation of thick scabs upon the nostrils, and there was an irritating erythema about the genitals, as well as a slight eczema of the scalp present. The bowels were irritable, sometimes being very constipated and sometimes too relaxed, and the infant was exceedingly cross and fretful, continually crying out in a feeble and plaintive manner. I immediately put it upon the use of bicarbonate of soda and calomel, which I changed a little later for mercurial inunction, with syrup of iodide of iron and cod-liver oil internally. It at once began to improve in the most marked manner, and now, at the end of six months, it is a large and finely developed child, and apparently perfectly healthy in every respect. I relate this case because it is one more to add to the very large number already on record which go to show that pemphigus appearing within a short time after birth, and affecting the soles of the feet and palms of the hands, is almost invariably of syphilitic origin. The best authorities, I believe, hold that there are exceptions to this rule; but they are certainly very rare. Personally, I have seen but one such, and even in that there seemed to be some reason to doubt whether it was not really of a specific character.

Two of the most interesting cases of hereditary syphilis were those of twins, who were both affected in precisely the same manner. They were six weeks old at the time I first saw them. The mother was, apparently, in good health, and denied having had syphilis. Of the father's history or condition I could get no satisfactory account. There could be no possible doubt, however, about the infants being the subjects of the disease. In both, the characteristic facies of hereditary syphilis, which is rarely mistaken by those accustomed to see much of the affection, was noticeable to a very marked degree, and in both, the surface of the cranium was everywhere covered with largely distended veins, indicating the hyperæmic condition of the meninges and brain within. There was or had been (according to the mother's account) no eruption upon the skin of either of them, except the erythematous irritation about the genitals noticed in the last case, and so very common in such children; but both were suffering from syphilitic coryza, which had commenced shortly after birth. The most interesting lesion in these twins, however, was an active inflammatory process, at some points amounting to ulceration, about the nails of the fingers and toes, which the mother stated had commenced when the children were about two weeks old. At least one finger and one toe in both hands and both feet was affected in each of the infants, and in each, if I remember rightly, precisely the same fingers and toes were attacked. They were put upon active anti-syphilitic treatment, but only remained under observation for about ten days or a fortnight, at the end of which period there was not much change noticed in their condition. In another case, there was marked edema of the genitals, which persisted for a considerable time.

In regard to the treatment of congenital syphilis, I have only to say that, as a general rule, I have found that by mercurial innunction to be the most serviceable, usually in conjunction with such tonic or alterant remedies as seemed indicated. It has the great advantage of not interfering with digestion, as is sometimes the case with agents given by the mouth ; though I have almost always found minute and somewhat frequently repeated doses of calomel well borne, especially when their administration was intermitted from time to time. At the time I reported the case of syphilitic hydrocephalus before alluded to, it was objected by some that the "mixed treatment," by the iodide of potassium and bichloride of mercury (which I employed for a time in the case), has such an unfavorable effect upon the stomach and intestines of young children that it ought never to be resorted to. I would here take the opportunity of stating, in explanation, that this was the only case of hereditary syphilis in which I have ever used the "mixed treatment;" that, as it was by no means an ordinary case of the affection, I thought this treatment peculiarly indicated, on account of the special character of the manifestations exhibited, and that, with great care in its employment, and its substitution occasionally by simple remedies particularly directed towards giving tone to the alimentary tract and assisting digestion, I had but little difficulty in maintaining it for a very considerable period. Finally, the remarkably happy results obtained in the case afford, I think, ample justification of the course which I pursued in it.

(39.) *Tænia Solium.*—Two of the cases of tape-worm have been already detailed in the clinical reports of the Dispensary (*New York Medical Journal*, November, 1877). In one, the child was three years old, and in the other, three and a half, at the time portions of the worm were first passed. In the third case, which is now recorded for the first time, there is certainly room for doubt as to the diagnosis ; but it seems altogether probable that the one given is correct. On the 25th of October last, the child, which was six years old, was first brought to the Dispensary. The most prominent symptom about the case was a very peculiar loud, sharp, and spasmodic cough, very much like the bark of a dog in sound, which could not be explained by any condition that I was able to detect about the chest or trachea. Suspecting that it was due to the irritation of intestinal worms, I ordered five grains of santonin every night and morning, until twenty-five grains had been taken, when a dose of castor-oil was to be given, and the passages were to be watched, as usual. Contrary to my orders, the mother did not bring the child back for nearly a month. She then stated that, after taking the oil, when the powders were all gone, the girl had passed a somewhat ragged piece of worm, which, from her description, seemed really to be a small portion of a tape-worm, and which her friends told her was of that character. She stated that it was in two or three sections joined together, and that it was broad and flat in shape. I ordered some more santonin, but have, unfortunately, entirely lost sight of the case since then.

My reason for giving the santonin again here, after the child had, as far as could be made out, passed a piece of tape-worm, was on account of its apparent success in the first of the two previous cases reported. As stated in the report, I have not seen it mentioned in any of the works as a remedy for tænia, and I was anxious to further test the powers of an agent which has proved so eminently useful in the more common varieties of intestinal worms. In this connection, I may mention that I have just seen a tape-worm passed by a child under the care of Dr. Edward F. Walker, at the Demilt Dispensary, after taking a drachm of kousso, in three doses, when santonin, calomel, and male-fern had, apparently, all failed in causing the expulsion of the worm.

(40.) *Tonsillitis.*—This, in my experience, is one of the most frequent of all the affections of childhood. It is usually accompanied by more or less febrile reaction, and, of course, by cough, if the inflammation extends as far down as the lower part of the pharynx; occurring very often in connection with ordinary bronchial catarrh. Not unfrequently the tonsils are covered to a greater or less extent by patches of sebaceous material from the follicles upon the organs, which, to the ordinary observer, present a striking resemblance to diphtheritic exudation, and have undoubtedly often occasioned the mistaking of this follicular tonsillitis for diphtheria. The distinctions in the appearances of the two are very clearly pointed out in Flint's Practice of Medicine. The treatment of tonsillitis in children which I have ordinarily found of the most service is a simple purgative at the outset, and afterwards a mixture containing chlorate of potassa, muriate of ammonia, and glycerine repeated every hour. If it is attended with cough, I add some brown mixture, and sometimes, also, an expectorant syrup to the above. In cases where the tonsils have become chronically enlarged, I have sometimes obtained good results by having them painted daily with tincture of iodine, while in other instances this procedure was followed by no benefit.

(41.) *Urticaria.*—Urticaria I have usually found associated with some derangement of the digestive function, and in one case it seemed to be dependent on the irritation of oxyurides. I have also found it extremely amenable to treatment when attention was paid to the diet and the condition of the bowels, and have found the combination of bicarbonate of soda with spiced syrup of rhubarb and tincture of colombo before mentioned of more general service than any other remedies in this affection.

(42.) *Vulvitis.*—In nearly all the cases this was traceable to the presence of oxyurides, and it usually promptly disappeared when santonin was given internally, and lime water injected into the vagina, as well as the rectum. In one case, where no evidence of worms could be obtained, and it was difficult to assign any special cause for the trouble, the affection persisted for a considerable time, but finally yielded to the use of astringent washes and a course of tonic remedies internally.

22 WEST 31ST STREET,
NEW YORK, FEBRUARY 1, 1878.

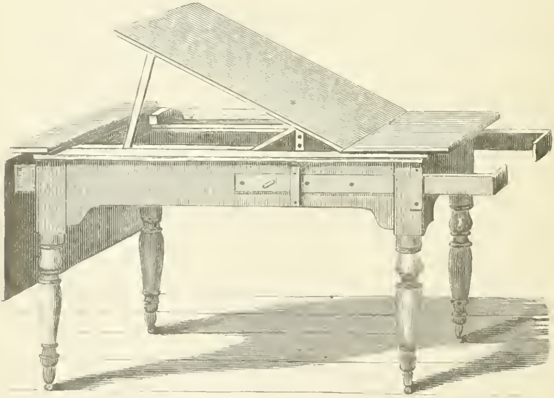
AN OFFICE TABLE FOR SURGICAL AND GYNECOLOGICAL PURPOSES.

BY
J. C. REEVE, M.D.,
Dayton, Ohio.

(With one Woodcut.)

I LONG since became entirely dissatisfied with the chairs in common use for office purposes, known as "speculum chairs." For the examination of women they entail upon the practitioner a back-breaking position, while they are not at all adapted for the general operations of surgery. I therefore set about devising a table which would be of general use for office practice, and better adapted than any chair for gynecological purposes. I succeeded in satisfying myself so well that I had decided to present the result of my efforts to the profession, feeling assured that there must be others who had experienced the same difficulties, and who would be benefited by my experience. This feeling is not only fully justified, but confirmed by the appearance in the last number of this journal of two tables designed for the same purposes, and I am therefore emboldened to present mine, believing that, in the points of simplicity and cheapness, it will not suffer from comparison with the others, and may possibly prove as satisfactory in its practical working.

Closed, it is simply a plain, stout table, and with a cloth thrown over it, attracts no attention to its purposes. The dimensions of the top are 44 inches in length by 29 inches wide. It is just large enough for placing a patient in Sim's position, and for this there is enough, but no space to spare. When arranged for examining a patient in the sitting position—a position which must always be largely used by the practitioner without an assistant, it is opened as in the cut, and the raised part can be placed at any desired angle by shifting the supports on each side to different notches on the under side. The seat part, from the hinges to the end, is 10 inches wide, and were I having another made, should have it one or two inches narrower, the constant tendency of patients being to get too far on, and this is one great objection to the chairs with their wide seat. The inclined plane is 29½ inches long. At the other end is attached a fall leaf, measuring 20 inches, which can be raised and supported by bars drawn out from beneath. Sometimes, after an examination or operation, it is desirable for the patient to lie still for a time; in such cases, the inclined plane can be lowered, the leaf raised, and the patient drawn back at full length, and placed in a comfortable position with the greatest ease. If the table is used for an operation, with the patient in the recumbent position, of course the feet are placed towards the leaf end. The foot-rests are made of stuff 3 inches wide and $\frac{5}{8}$ thick; they run easily and smoothly in the brackets, and when pushed home, are entirely out of sight and out of the way. One point in regard to them may seem trifling, but it is of great practical convenience: the pegs hold them in place by coming against the bracket, and do not run through into the table. The advantage is this: they are not drawn out until the patient is seated and a cover thrown over her; the examination over, they are pushed back out of the way by the simplest movement, and in neither



instance is there any of that catching of the clothing on the foot-pieces, which is so annoying and often embarrassing.

The table is on castors, and can be readily moved, with the patient on it, to any position in the room, or angle in regard to the light. It is not upholstered, but a blanket or lap-robe is folded and spread on it. As originally designed, it had drawers for instruments under the foot-rests, as in Dr. Chadwick's table in the last JOURNAL. It proved so difficult, however, to get patients to arrange their clothing properly that they have been abandoned. Instrument drawers can be placed in the sides if desired. I have a small stand at the side for whatever is required, and the patient steps on a cushioned stool as she takes her position.

The material of the table is black walnut, oi ed, and it cost me sixteen dollars.

I will say to those who may think of adopting such an article of office furniture, that I anticipated great objection on the part of patients to getting on a table, as compared with the possibly less formidable-looking chair. Such anticipations have not been realized ; so far, not a single objection has been made, and I have found no disadvantage to offset the very great advantages of having the patient placed in good position at a convenient height.

CLINICAL CASES.

A CASE OF MORBID RETENTION OF THE PLACENTA AFTER LABOR AT TERM.[1]

BY
J. TRUSH, M.D.

THE July number, 1877, of this JOURNAL contains the report of a case under the above title ; by reference to that article it will be seen that the lady whose case furnished the subject-matter of the paper in question believed herself then pregnant a second time, a belief which soon merged into positive knowledge. The confinement was expected to take place some time in August, no menstruation having been observed since September, 1876.

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[1] Read before the Cincinnati Obstet. Society.

The summons to attend her were not served, however, until the 21st of September last, and even then, not because the lady believed herself in labor, but because she had fever and felt quite ill. I found patient up and about, and on inquiry learned that eight days ago she had experienced three or four paroxysmal pains, which she regarded as the commencement of labor, and hastily sent for a midwife who, after examination, told her it was a false alarm, she was not in labor, could not be, because the child was still too high. In answer to the question if at any time since the commencement of the present trouble she had observed a gush of water passing from her, patient could give no definite answer, but thought a considerable quantity had passed during and immediately after the midwife's first exploration. The midwife subsequently examined patient from day to day, and invariably repeated her first statement, viz.: that labor had not yet commenced. Patient further stated that, during the entire week, she had never been free from pain, but had suffered a great deal, had been afflicted with a profuse slimy and bloody discharge from her genital passage, which discharge, for the last two or three days, had assumed the appearance of bloody matter; she had also experienced chilly sensations at times, and had had more or less fever for several days past.

The vaginal exploration now instituted revealed the following condition: Vagina almost filled with a thick reddish muco-purulent fluid; the os uteri largely dilated, sensitive to touch and occupied by a roundish-conical body, the left shoulder of the fetus;—position of shoulder presentation being right cephalo-iliac, dorso-anterior—the uterus firmly contracted upon its contents; the fetus to all appearance doubled up into a ball; no pulse to be felt at the wrist of the partially prolapsed left arm, nor can the fetal heart be heard over patient's abdomen. The child is evidently dead. The patient is feverish and has a pulse of 120 per minute.

After explaining to the lady the nature of her condition, an ineffectual effort was made to perform podalic version by the bimanual mode. Becoming convinced that the presentation could only be rectified by the internal method and under chloroform, I requested the assistance of Dr. J. W. Underhill, who, after examination of patient, confirmed my diagnosis and volunteered to administer the anesthetic. Even with complete narcosis of patient the passage of the hand was attended with a good deal of difficulty, but once fairly in the uterine cavity, the subsequent steps of the version were sufficiently easy; a foot, the nearest, was brought down and drawn before the vulva; it proved to be the left. The version effected, it was decided to let the patient rest for a short period and to administer ergot in the mean time. Two hours later, no progress having been made, I proceeded to extract the child. In so doing, I observed that the uterus readily enough contracted upon the receding contents, while it utterly failed to develop expulsive pains. The child, on being brought to light, was found to be extensively macerated; it had evidently been dead for several days.

After the removal of the child, I ascertained that the patient was losing blood in considerable quantity; also that the placenta could not be felt over the os, and that the uterus was not contracted as firmly as was desirable. Friction over the fundus and external compression were practised, but to no purpose; the hemorrhage continued and the placenta remained as it had been, entirely out of reach of the exploring finger. Without further delay the hand was introduced into the uterine cavity, with the object of removing its remaining contents and thus arrest the hemorrhage. I now discovered that a small portion only of the after-birth was detached, the remainder being still firmly adherent; the whole located in the left superior angle of the uterus, but mainly upon the posterior wall of that region. Tentative efforts toward detachment having rendered it evident that very energetic manipulations would be necessary to separate the placenta, if at all, and not desiring to go to this extreme single-handed, I directed my efforts, for the moment, solely toward the arrest of the hemorrhage. This was readily enough accomplished simply by compression of the uterus. Dr. Underhill was now recalled, and also Dr. Rothacker requested to assist. After having been made acquainted with the events in the case, Dr. U. proceeded to explore the uterine cavity, and to remove, if possible, the retained placenta, Dr. R. and myself giving such external support as he directed. The doctor's manipulations occupied several minutes, and were brought to a close only by reason of inability longer to sustain the effort, his hand being completely benumbed. He had succeeded in detaching from the uterine wall about one-third, he thought, of the placenta. In my turn, after operating first with the right hand and then with the left, I accomplished further detachment of probably another third. The remainder, however, resisted all my efforts, the tissues being so compact that I could not even force the tips of my fingers into the mass.

The detached portion of the placenta was now carefully separated from the adherent remnant and brought away, and was held to represent rather less than two-thirds of an average-sized placenta. The patient being by this time very much exhausted, partly in consequence of the entire week's suffering, partly from loss of blood, as well as shock, it was deemed best to abstain from further operative interference and meet indications subsequently as they might present themselves. Another point deserves notice right here, viz., that in the right superior angle of the uterus, where the placenta of the first pregnancy had been located, a number of fibrous cords, a kind of coarse network, was encountered both by Dr. U. and by myself. Under the impression, first, that these bands were shreds of membranes, I attempted to break them down, but found they were very strong and would bear greater strain than I felt justified to employ. They were consequently left behind.

The patient's condition being, as stated, one of great prostration—pulse 144 per minute and very feeble—brandy was administered in liberal doses, and, in addition, quinine and morphine ordered—gr. x. of the former and gr. ¼ of the latter every eight hours—also fluid extract of ergot, half-drachm doses every three hours.

Sept. 22d, 9 A.M.—Patient had rested comparatively well during the night; had, however, vomited twice; is thirsty; temperature, 99°; pulse, 140–144 per minute; abdomen tympanitic; no hemorrhage; lochia serous in character; had voided urine several times. Prescriptions of last night continued, except that, at the request of the patient, port wine is substituted for the brandy. Locally ordered turpentine stupes to abdomen, and antiseptic intra-uterine injections every eight hours. Injection fluid composed of one drachm of carbolic acid to one pint of chamomile tea.

Under this and the ordinary treatment during puerperality, convalescence progressed favorably, pulse and temperature gradually becoming normal.

Oct. 3d.—Not a trace of lochia remains; pulse 96; temperature 98°; to use antiseptic injection only once per day.

Oct. 10th.—Appetite good; pulse and temperature normal; patient feels perfectly well; all treatment discontinued. On bimanual exploration of uterus, this organ is found low in pelvic excavation and greatly reduced in size; process of involution evidently having progressed with average rapidity; patient to remain quiet for another week or ten days.

Oct. 20th.—Patient has resumed her household labors.

1878, *March 3d.*—My former patient looks the picture of health; has menstruated regularly since December last, but the flow is scanty.

These, in the main, are the facts pertaining to the second confinement of this, in a medical point of view, certainly highly interesting patient. The report of the first confinement portrayed a case so extraordinary in some of its details that possibly some of the members of the society were a little skeptical as regards the accuracy of those statements. But now a second confinement of this lady takes place; the events and conditions are witnessed by another physician besides myself, and, as the report shows, are very similar to those of the first labor. Again there is a transverse presentation, this time not rectified until probably a full week after the commencement of labor; the patient again, as near as can be ascertained, carries the child considerably beyond the average period of gestation; again the uterus is indolent, behaves very much like a distended rubber bag, always contracting with a good deal of firmness upon its contents, but at no time developing vigorous contractions; a second time almost the entire placenta is firmly adherent to the uterine wall; this time, two operators succeed in detaching, with difficulty, a scant two-thirds, while in the first instance not more than about one-fourth is detached and removed. In consequence of the circumscribed spontaneous detachment, as well as the subsequent artificial separation of portions of the after-birth, there is considerable hemorrhage in the second confinement, while in the first this complication is absent.

In both instances the retained portion of placenta is unquestionably absorbed without decomposition, there being absolutely nothing in the discharges, either time, which might have been construed as the representative of a decomposing placenta, nor did any fragments of placental tissue, beyond those mentioned in the first report, pass away, and, be it reiterated once again, that everything which passed from the patient was scrupulously examined, either by myself or by the nurse. The return injecting fluid was, of course, turbid, and contained minute shreds of tissues, but certainly no more than is found after an entirely normal labor. In regard to the character of the adhesions, Dr. Underhill will doubtless corroborate the statement, when I say they were exceedingly firm, and that it was not without great risk of laceration of the uterine wall that the partial detachment was effected.

Concerning the fibrous bands noticed in the right upper angle of the uterus—location of the placenta in the first pregnancy—I am inclined to the belief that these were remnants of the first placenta; the more succulent structures having been removed by absorption, while a few of the most obdurate fibrous trabeculæ withstood this process.

The pathology of morbid placental adhesions was discussed at some length in the previous paper above referred to, and the view entertained that, in the case under consideration, the exciting cause had been of a mechanical nature—pressure of the fetal head against the placenta. No such condition was discovered in the second pregnancy, and, beyond the bare statement that the patient again complained of a good deal of pain in the abdomen during the latter half of her gestation, no explanation relative to probable causation is ventured.

The occurrence of cross presentations in the two successive pregnancies finds an explanation in the fact—ascertained in the first labor, but accidentally omitted in the previous paper—that the pelvis of this patient is a little short in its conjugata vera, this diameter measuring only about $3\frac{3}{4}$ inches.

CASE OF BROW PRESENTATION CONVERTED INTO FACE PRESENTATION.

BY

WILLIAM T. LUSK, M.D.

(With two woodcuts.)

AT noon, on the 27th of April last, I was summoned to the Maternity Hospital, on Blackwell's Island, to assist in the delivery of a woman in whom the diagnosis of face presentation had been made, and who had then been in labor nearly twenty-four hours. Supposing the delay to be due to tardy rotation of the chin anteriorly, I purposely delayed my visit, hoping that time would overcome the difficulty. On my arrival at the hospital, at 3 P.M., I found the child just delivered, and presenting the appearance admirably reproduced in the drawing made by the house physician, Dr. A. H. Fridenberg. From Dr. Fridenberg I learned that the mother was a multipara, having had previously three living children. Her pains began

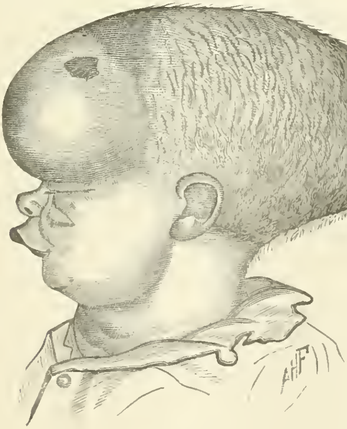


FIG. 1.

at 2 P.M. on the 26th inst. At 6.45 the following morning, the membranes ruptured. Dr. Fridenberg then recognized the anterior fontanelle as the most dependent portion of the head, with the forehead and nose directed to the left acetabulum. With difficulty the mouth, too, could be reached.

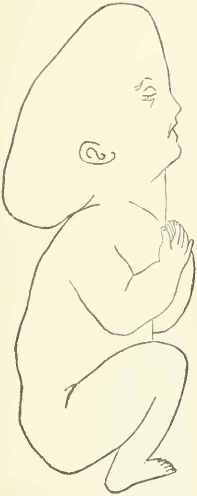


Fig. 2. The shape of head in brow presentation. (After Säxinger.)

Before the rupture of the membranes, the pains had been regular and efficient. Afterward they became very faint for upwards of an hour. Dr. Fridenberg tried without success to flex the head. At 9 A.M., he gave ʒ i. of the fluid extract of the viscum album, and in ten minutes the pains recurred, continuing quite strong up to the end of labor. After a second stop, which lasted eight hours, the chin rotated forward, and just prior to delivery, passed under the pubic arch. The brow presentation at the beginning of labor ended in a complete face presentation. The head of the child exhibited the swelling about and anterior to the large fontanelle characteristic of brow presentations, with the occipital elongation peculiar to face presentations.

Dr. Fridenberg furnishes the following accurate description and measurements made by him immediately after delivery:

The head of the child, which was a male, weighing 8 lbs. 3 oz., was immensely elongated. The caput succedaneum occupied the entire forehead; the outer fontanelle was very large, but the posterior was enormous; in fact, the occipital bone did not seem to touch the parietal bones at all at any point, the sutures being $1\frac{1}{4}''$ wide at the nearest points. The occiput was one soft fluctuating mass; all the cranial bones were easily movable independently of each other, although the head was by no means flaccid, but full, rounded, and tense. On the cheeks, two small bruises were caused by pressure of the pubic rami on the malar prominences. The measurements of the head, one hour after birth, were as follows:

From root of nose to occipital protuberance, over scalp, 10 inches.

From centre of forehead to occipital protuberance around side of head, 9 inches.

Circumference of head at widest part, just above ear, 17 inches.

From tip of ear to sagittal suture, $4\frac{3}{4}''$; longest antero-posterior diameter in straight line, $7\frac{3}{4}''$; projection of forehead beyond root of nose, $\frac{7}{8}''$; projection of occiput beyond nape of neck, $2\frac{1}{4}''$.

Child cried feebly, and could not nurse during first day, but by second day nursed well; head was firmly bandaged daily, and at the end of four days had almost entirely returned to its natural shape. Child subsequently did very well, with the exception of a slight attack of icterus, dating from the second day. With the exception of some febrile disturbance referable to the inception of lactation, the mother made a good recovery.

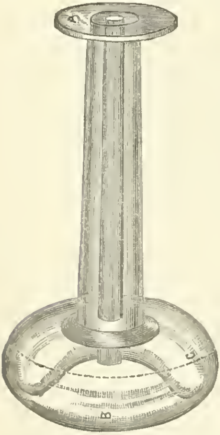
THE REMOVAL OF A PESSARY FROM THE CAVITY OF THE UTERUS TWENTY-FIVE YEARS AFTER ITS UNSUSPECTED INTRODUCTION.

BY
T. NAYLOR BRADFIELD, M.D.,
Newark, N. J.

(With one woodcut.)

WHILE possibly possessing but slight practical importance for the general practitioner, a brief account of the instrument exactly illustrated in the accompanying cut cannot otherwise than prove of interest to the uterine pathologist, being one of the most curious of similar cases that the writer has anywhere found on record.

During the summer of 1877, Dr. C. F. Underwood, of this city, being called to prescribe for a patient suffering from sudden acute leucorrhœa, discovered, in his attempt to fathom the cause of the malady, a portion of the instrument represented in the cut projecting from the os uteri, the dilated lips of the cervix surrounding and closely embracing the large bulb, B, at a considerable distance in front of the dotted line C, there being, in fact, but a mere line of the instrument exposed to view.



One-half actual size.

Measuring by conjoined manipulation the extreme length of the instrument, and deciding it to be the probable source of existing irritation, the doctor, with some degree of force, attempted its removal, but failing in the unanesthetized condition of his patient to do so, Dr. Kent and the writer were called in consultation; whereupon, the patient being thoroughly etherized, we succeeded with considerable difficulty in dislodging from its long residence the unsuspected tenant of this old woman's uterus.

The extreme length of the instrument, which is of glass, gives us a measurement of $4\frac{3}{8}$ inches, the stem being $3\frac{1}{2}$ inches long by $\frac{5}{8}$ diameter. On one end is a large bulb, B, $2\frac{1}{8}$ inches in diameter, concave on the upper and slightly convex on the under surface. On the opposite end is a perfectly flat button, A, $1\frac{1}{4}$ inches in diameter by $\frac{1}{12}$ thickness, which, with the stem and greater portion of bulb B, was within the uterine cavity, making the distance of button A from the external os $4\frac{1}{4}$ *inches within the cavity of the uterus.*

However interrogated, the patient declares herself entirely ignorant of the instrument, and until its removal was without suspicion of its presence within the pelvic cavity. She remembers, however, about twenty-five years ago, when then a woman 52 years of age, of having suffered from a "falling," for which complaint a certain "Dr." Gray performed some operation, the nature of which she never understood, or has long since forgotten.

In a letter to Prof. T. Gaillard Thomas, I mentioned, as being to me the most plausible solution of her case, that in great probability the convexity of bulb B was intended by the inventor to receive the cervix, the button A being supported without the vagina by a perineal strap or bandage, not unlike Dr. Wadsworth's and similar uterine elevators—the perforation of the tube giving free discharge to the menstrual flux and other uterine secretions. In this, its proper application, "Dr." Gray was, however, undoubtedly deceived, and naturally enough supposing that the smaller end A would prove of easier introduction than bulb B, the first was driven through a previously lacerated cervix, the uterus forced sufficiently far up to admit of the large end being pressed within the vagina, and the instrument left to work its own slow way into the cavity of the uterus, as in the tedious lapse of time it did so miraculously succeed in doing.

With greater credit for "Dr." Gray, Prof. Thomas in his reply says:—"The case reported in your favor of yesterday is one of great interest. It seems to me probable that the patient suffered from prolapsus, due to subinvolution of the uterus, which resulted from laceration of the cervix. The medical attendant endeavored to support a very large uterus with a gaping mouth by a glass vaginal stem, which gradually dilated the cervix and entered the uterus. There it gradually became tolerated and has since remained."

The only difference as to the introduction of the instrument between Dr. Thomas and myself being the charity extended to "Dr." Gray, in supposing him to have made an intelligent use of the instrument, when to me (with all due deference to the opinion of Prof. Thomas) the idea appears ridiculously impossible, since, at whatever stage the arrest of involution may have happened, or whatever the degree of cervical laceration existing, there is really no apparent applicability of the instrument to such a case as the one presented, and if only within the vagina, as suggested by Prof. Thomas, its introduction, however improbable the occurrence of such a mistake must appear, seems to have been the clear result of ignorance, or a no less reckless experiment of the attending physician.

REDUCTION OF AN INVERSION OF THE UTERUS OF ELEVEN YEARS' DURATION.

BY

ABBIE C. TYLER, M.D.,

Waukegan, Ill.

MRS. G. was delivered of her first and only child eleven years ago last January. The labor was not long or severe, but for some reason the attending physician thought proper to deliver by forceps. She had severe pain and loss of blood for several days afterwards, and continued to flow profusely for six months, when the hemorrhage nearly ceased for two weeks, but the next two weeks was profuse again, so severe as to confine her to the bed. It continued to alternate thus every two weeks, slight and excessive, but never ceasing, so prostrating her strength that she was confined to the bed for two years. By the use of tonics she regained strength sufficient to attend to her household, but the constant hemorrhage continued as before. About three years ago, her husband broke his leg. In caring for him, she again became prostrated by an attack of excessive flooding, which had lasted several days when I was called to see her. She had been taking ergot without much effect, but astringents finally controlled the hemorrhage sufficiently, so that I could make a careful examination of the case.

I found a large tumor occupying the vagina, which was very sensitive to the touch and bleeding on slightest pressure, which proved to be the inverted uterus. It was inflamed and swollen, so much that any attempt to return it would have been very hazardous, so I began treating by local application to reduce the inflammation and enlargement, at the same time giving remedies to restore the general health. For local application, I used glycerine and carbolic acid, and glycerine and iodine; I applied these when the flooding was *not profuse;* when it was profuse, any interference aggravated it, until the uterus was reduced to nearly normal size. The discharge had become of a muco-sanguinous character during two weeks of the month, and pressure of the fingers gave the feeling of a hollow body. I administered chloroform, and tried pressure with the fingers, but did not succeed. This caused so much soreness that I had to wait until it was subdued before another attempt could be made, then inserted Braun's colpeurynter, which caused so much irritation that it had to be removed after a day or two. When the irritation was relieved, another attempt was made with the colpeurynter with like results; finally, on the 3d of January last, it was again introduced. It remained in this position about forty-four hours, when the patient was seized with severe pains, which she described as drawing and pulling upwards. She removed the colpeurynter and found the tumor gone. I was informed of the circumstance, and saw the patient, and found upon examination, that complete reduction had taken place.

The patient has since been doing well; the hemorrhage and mucous discharge have ceased, and menstruation has occurred twice since, at the regular intervals, with no excess.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, October 16th, 1877.

The President, Dr. T. G. Thomas, *in the Chair.*

Dr. Thomas reported a case of

SUPPOSED UTERINE FIBROID CO-EXISTING WITH PREGNANCY AT TERM.

Six months ago he was called by Dr. Little to see a very small, somewhat deformed woman, with a large abdominal tumor. The tumor had been discovered a year before, and she had married six months after. The tumor reached from the ensiform cartilage to the symphysis pubis, and was supposed to be a fibroid tumor, with frequent cavities or interspaces containing fluid. Low down in the pelvis there was a rounded mass, which Dr. Thomas at first took to be the pregnant uterus. The passage of the uterine sound by Dr. Little seemed, however, to preclude this condition.

An explorative incision was decided upon, and if it was deemed advisable, the tumor was to have been removed. After waiting several weeks, another examination revealed distinct fetal movements. The tumor was now higher than before, and the uterus below it. As there was no necessity for operative interference, the operation was given up. The tumor continued to rise before the growing uterus, and the patient reached full term.

The labor was exceedingly difficult, for the uterus, impeded, could not act well. The deformity of the pelvis also impeded the progress of the fetus. The perineum was badly ruptured, but the woman made a good but slow recovery.

The tumor is still growing, and is probably a uterine fibrocyst. There are very few such cases on record, and when met, as in cases where ovarian tumors and pregnancy co-exist, it is very puzzling to know what to do. Mr. Spencer Wells has operated eight times for ovarian tumor complicated with pregnancy, with only one death. Dr. Sims found pregnancy when doing ovariotomy, completed the operation, and the patient recovered. In this case there is no good ground for operating, as the character of the tumor is doubtful. The tumor will be tapped soon.

Dr. Watts asked whether the presence of pregnancy at full term would not militate against uterine tumor.

Dr. Peaslee said he had seen three cases where an ovarian tumor existed and pregnancy went to full term, and the women were safely delivered. One woman had had three children after the first discovery of the tumor. She was tapped at the sixth to seventh month, and greatly relieved. The last time after tapping, the tumor filled so rapidly that the expulsion of the fetus caused no perceptible decrease in her size. She died soon after.

Dr. Thomas mentioned a case where he found a large cyst when the patient was in the fourth month of pregnancy. She was aspirated in the fifth month, and four times afterwards during the pregnancy. Three months after delivery ovariotomy was performed. Another case refused tapping, and died of peritonitis from rupture of the cyst.

Dr. Peaslee mentioned a case where a dermoid tumor, which was not amenable to treatment, burst through the cervix during labor, and after the contents were discharged, labor was completed. The tumor remained open for three years, and after the discharge of several masses of hair, was finally closed.

Dr. Gillette related the case of a woman who had a large multilocular tumor. She went through labor twice, but in the third labor the cyst was ruptured, and the patient died.

Dr. Paul F. Munde reported a case of

SINGLE UTERUS WITH DOUBLE CERVIX AND VAGINA,

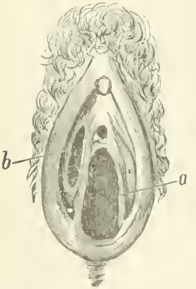
the history of which had been sent him by a Western physician to dispose of as he saw fit. The history, in the physician's own words, is as follows:

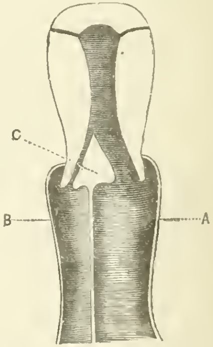
"The patient was a woman of middle age, who had been married ten years. During the third year of her marriage, she had a premature labor at the sixth month. She had since had two miscarriages from accidental causes. She was under my care for erosion of the os uteri, which gave rise to profuse excoriating leucorrhea. I treated her with weekly applications of chromic acid, and had the satisfaction of seeing the os assume a healthy appearance, and on the occasion of several examinations, made after I pronounced the erosion cured, no leucorrheal discharge could be discovered in the vagina in which I placed the speculum. But there was a profuse discharge which she complained of, and which she declared issued from the genitals. This apparent contradiction placed me in an unpleasant position, and I observed to her on one occasion that she must have a double vagina. She wished me to examine and ascertain. At first I could not discover but the one orifice, but on close manipulation I found an opening to the right of the median line, and separated from the opening of the vagina, through which I had treated the os, by a rudimentary vulva. This orifice was an inch higher, or nearer the pubes, and was of such small size that I could barely introduce my finger. In fact, it seemed closed by a hymen, but I succeeded in passing the finger up to a cervix smaller than the one I had treated. This vagina was wholly separated from the other by a thin septum, and the transverse rugæ went entirely around the tube, as was also the case in the left vagina. When I withdrew my finger, a profuse milky discharge followed. Here, then, was the origin of the remaining leucorrhea. Procuring a small glass speculum, I succeeded in introducing it up to the os, and found it abraded—denuded of epithelium. A few applications of chromic acid removed this, and the leucorrhea ceased.

On one occasion I introduced two sounds into the uterus, one through each cervix, and could distinctly feel them strike each other in the one uterus. As nearly as I could judge, the cervix, which I shall call No. 1, was the genuine one, as it was on a direct line with the uterus, and was the largest. Cervix No. 2 was very small, and branched out of the lower end of the uterus, much as does a supernumerary finger or toe. Evidently, sexual intercourse was confined to the larger vagina, and through this evidently had passed the aborted fruit of conception.

The next question which I desired to solve was, whether the menstrual flow was limited to cervix and vagina No. 1. I obtained her permission to examine the genitalia during the menses, and found unmistakable evidence that the menstrual blood flowed from both vaginæ.

That there was but *one* uterus I fully satisfied myself in the following manner: I first held a sound in each hand, and struck their points together. I then placed one in each vagina, and struck them against each other, with the *septum* between. Then they were introduced into the uterus and struck together, and the sensation given to the hands was the same as when struck *outside* the body, and very different from the sensation given when the thin vaginal septum was interposed."





So far the author's description, which, for accuracy and method of observation, would seem to leave no doubt as to the correctness of his diagnosis.

On looking up the subject of congenital uterine deformity, I find that a case of this kind, of a single uterine cavity with *double* cervix, is mentioned neither by Kussmaul nor Klob (with double vagina there are a number), although the former speaks of a variety where the septum is merely indicated in the fundus, with sufficient distinctness to be recognizable, which he calls *uterus subseptus unicorporeus*, a name which appears excellently adapted to this case. He omits to state whether the cervix is divided or not in this variety, but mentions that a division of the external os only by a thick band is an exceedingly rare anomaly, and gives it the name of uterus subseptus biforis, supra simplex. An appropriate name for this case must thus be: *uterus subseptus biforis unicorporeus*, or *supra simplex et vagina septa* or *duplex*.

It occurs to me that possibly this case was originally one of bilocular, or non-horned uterus, in which the cavity is divided by a septum descending vertically from a normal fundus, which septum was partially destroyed during the labor, leaving the apparently unique anomaly described by my correspondent. Possibly the premature delivery may also have been due to this division of the uterine cavity.

The continuation and appearance of the septum in the vagina also favors this view, as well as the extension of the transverse rugæ all around the tube in both vaginæ.

Evidently it was the left vagina through which coition was performed, impregnation occurred, and the fetus was expelled. The right vagina and cervix not being involved in either of these processes, remained virginal, the vagina only being displaced slightly upwards by the uses to which the other canal was put.

Dr. Harrison related the history of a case of

OVARIAN TUMOR CURED BY INJECTION OF IODINE.

Three years ago, Dr. T. A. Emmet attempted to perform ovariotomy, but found the adhesions so extensive that it was impossible to proceed with the operation. The woman had given birth to a nine months' child three months before. The tumor had not grown for some time previous to the labor, but afterwards it grew very fast. After the failure of the operation, the cyst burst into the stomach, and the contents were vomited up. It was then determined to inject the sac with iodine, after having washed it out with warm water. This was done, tr. iodini ℥i. being injected and left in. The trocar, however, wounded a large artery, and the blood flowed very freely when it was withdrawn. The hemorrhage was stopped by pressure. Inflammation followed, and thrombosis of the left crural vein. This happened three years ago. Since then she has been perfectly well, and bore a child during the past summer.

The annual election of officers for 1877–8 was then held, and resulted in the election of the following gentlemen:

President, DR. ALEX. J. C. SKENE.
Vice-Presidents, 1*st*, DR. J. S. GREEN; 2*d*, DR. C. S. WARD.
Recording Secretary, DR. MATTHEW D. MANN.
Corresponding Secretary, DR. EMIL NOEGGERATH.
Treasurer, DR. G. S. WINSTON.
Pathologist, DR. M. D. MANN.

Stated Meeting, November 6th, 1877.

The President, DR. A. J. C. SKENE, *in the Chair.*

DR. PAUL F. MUNDE presented a specimen consisting of several tufts of matted hair, derived from what was undoubtedly

A SUPPURATING DERMOID CYST OF THE OVARY, DISCHARGING PER VAGINAM.

the history of which is as follows:

"B. E., 39 years of age, mother of three children, came to me August 16th last, complaining of a profuse vaginal discharge. She stated that her last confinement occurred seventeen months previously, and was perfectly normal, the child being born alive; that she was seized with inflammation of the bowels, and confined to her bed for five months after delivery, and has since felt weak, and suffered from profuse leucorrhea. On examination I found the uterus somewhat anteverted and securely fixed, the cavity of the pelvis being to a great extent occupied by a hard tumor behind the uterus, nearly of the size of a fist. On withdrawing the finger, the discharge was seen to be sanio-purulent and so offensive as to lead me to suspect the presence of an abscess, possibly connecting with the bowel. In order to find the orifice from which the pus came, I examined the patient with Sims' speculum, and on drawing the cervix slightly forward with the tenaculum, discovered what appeared to be a bit of decomposed cotton in the posterior cul-de-sac; which, being withdrawn with the forceps, proved to be a curl of fine silky white hair. Two similar curls were removed, and the sound then passed 2½″ into a cavity, apparently capable of holding a hen's egg, from which the purulent discharge issued. and which was situated in the mass of coagulated lymph behind the uterus. The uterus measured 3″ in length. Warm antiseptic injections were ordered. Aug. 23d, the cavity measured but 1½″ in length, and several small curls were removed, the opening being first dilated with Ellinger's dilator. Sept. 18th, patient brought two tangled and matted clumps of fine hair, mixed with exceedingly offensive sebaceous matter, which she said had been discharged a few days previously. These clumps were of the size of a half and a quarter dollar respectively, and the patient stated that several similar masses had been discharged before she consulted me. Since the discharge of these coils, the patient has been very much relieved.

Nov. 1st, the sound enters only 1″ deep, no more hair has been discharged, and the purulent flow has almost ceased. The cavity is evidently contracting, in which process I shall in case of need assist, by the injection of tincture of iodine. Immediately on removing the first curl of hair, the conclusion naturally forced itself upon me that this tumor could be but one of two things—either a dermoid cyst of the ovary, or an extra-uterine gestation. In view of the absence of any record of the discharge of fetal fragments, and the peculiar silky curly appearance of the hair, I at once decided in favor of the former condition, but for corroboration submitted the hair to Dr. Heitzmann, who pronounced it to be young, imperfectly developed hair, the cortical substance of which was incomplete; as to its origin, it might come from the head of a fetus, but its length and curly character inclined him to share my view ot the case. My theory of the pathology of this abscess is, that a dermoid cyst of the ovary existed prior to the last confinement, unknown to the patient (at least she denies having noticed an abdominal enlargement before her last pregnancy): that this cyst, during the expulsion of the last child, received such severe contusion as to cause it to inflame, suppurate, and finally burst into the vagina, after having become firmly adherent to the pelvic viscera and Douglas' pouch by local (perhaps general) peritonitis.

Since arriving at this, of course, very natural conclusion, I find in a paper kindly sent me by Dr. Barnes, on "Retro-uterine Tumors," reprinted from the St. George Hospital Reports, the histories of four cases of dermoid cysts, in one of which the cyst obstructed labor and was emptied by puncture with a trocar; in the other two the cysts were not discovered till after labor, when both suppurated, one case terminating fatally, the other recovering. In both these cases the suppuration evidently followed pressure during delivery, and Barnes points out—what I have not found mentioned in any of the three newest text-books on gynecology, Hewitt, Schroeder, and Thomas—that dermoid cysts are usually roused into active mischief under the influences of pregnancy and labor, after remaining dormant and unrecognized perhaps for years previously."

Dr. Noeggerath presented the heart and uterus of a woman on whom he had performed

GASTRO-HYSTEROTOMY FOR THE REMOVAL OF A LARGE FIBRO-CYST OF THE UTERUS,

and gave the history of the case as follows:

J. B., æt. 30 years. Had born three children, and one abortion. The children all died in infancy. She had suffered from an umbilical hernia for the last ten years.

Seven years ago, she noticed a tumor in the right iliac region. Her physician at that time detected a small round tumor which was considered to be an ovarian cyst. Dr. Noeggerath saw her about the beginning of April last, to decide upon the nature of a tumor which her medical attendant considered to be an extra-uterine pregnancy.

On examination, there was found a small mass, consisting of a number of very movable tumors, lying across the lower part of the stomach, of about the size of a large orange; and across its central portion, running from the left and lower sections upwards towards her right, a vessel of the size of an umbilical cord, which could be shifted upwards, and which pulsated distinctly. The tumor seemed to be floating in fluid. Taking into account the normal condition of the uterus, its size as well as its function, the idea of extra-uterine fetation was abandoned. The uterus was found to measure very little more than 2½″, and was somewhat directed towards the right side.

She was tapped with the assistance of her physicians, Dr. Bopp and Dr. Joseph Müller. The fluid was mixed with a great deal of blood; and after the tapping, the abdomen was so very tender that a renewal of the examination on that occasion was not possible. About one week later, the tumor was to be distinctly felt, only apparently more solid, and without any of its parts being movable. She was tapped again Sept. 25th, and on the 29th the operation was performed.

The condition of the heart was one of considerable interest. There was a diastolic murmur at the base, heard most distinctly at the right of the sternum, and a murmur at the apex; with little or no dilatation on account of the heart-trouble. The question arose whether chloroform or ether could be safely given. As the cardiac muscle was not much impaired, this was decided in the affirmative, and chloroform chosen as the anesthetizing agent. She bore this for 1¼ hours during the operation, showing that organic heart-lesions do not contraindicate the use of chloroform where there is no dilatation.

The abdomen was opened up to the sternum, and as soon as the tumor was visible, a large bunch of vessels, fifteen to twenty in number, was found attached to the vessels of the omentum on one side, and to the tumor on the other. These vessels were enormously dilated, one even being as large as a goose quill. One or two of these vessels were cut with the hot knife of the galvano-cautery, but they bled so profusely that all the vessels were gathered together and tied. The hemorrhage was still very bad. The tumor was therefore raised at once and the pedicle grasped, and the large vessels all tied. The pedicle was then tied with silk, cut, and the tumor removed. The tumor was found to be a fibro-cyst of the uterus, developed from the right cornu, hence the absence of enlargement of the uterus. The blood was all carefully and quickly sponged out, and the wound closed. The patient did well until 12 P.M., when she failed rapidly and died.

An *autopsy* showed that she died of hemorrhage, and that the bleeding took place either from small vessels which had been tied with catgut, or from some vessels in an adhesion which had been torn off and not tied. The heart showed the valves to be atheromatous; the fundus uteri and both ovaries were intact, and the remains of the pedicle of the tumor was found in the right cornu. The case shows the impossibility of an absolute diagnosis between an ovarian and uterine tumor. The operation was not difficult, not more so than if the tumor had been a solid ovarian tumor. The complication was accidental and not necessarily due to the kind of tumor. Dr. Noeggerath also remarked that either catgut is so altered by contact with living tissue that it does not hold the artery long enough, or else the gut which we get here is not of good quality.

There was no vomiting in this case, and this he considers due to the adoption of Dr. Lente's plan of giving a large dose of bromide of potash before the chloroform.

Dr. Mann asked why chloroform was chosen instead of ether, remarking that chloroform acts, when it proves fatal, by paralyzing the heart, while ether does not have this action, except when pushed to excess. It would seem, then, as if ether would be the proper agent to use when the heart is at all disabled.

Dr. Noeggerath replied that he had found some difficulty in procuring perfect anesthesia in women with ether; and again, chloroform is less apt to produce vomiting. If vomiting comes on after the operation, he trusts to chloral by the rectum to stop it. He gives ʒ ss. and pushes it until vomiting is controlled.

Dr. Peaslee said he had operated in two such cases, both of which had been published. In one case, after the removal of the tumor, the patient developed a bad cough; some of the intestine came through between the sutures, and not being returned in time, owing to the negligence of an assistant, the patient died. The other case recovered.

Dr. Peaslee also related a case of

OBTURATOR HYMEN.

The woman came to consult him as to the propriety of marriage; stating that she thought there was some obstruction. She menstruated regularly, had no dysmenorrhea, and was well developed. On examination, Dr. Peaslee was unable either to pass his finger or a sound into the vagina. He was unable to find the slightest opening in the hymen, either by touch or sight, under a strong light. He then took the wire from a small catheter, and, by pressing with considerable force, he at last found a very minute opening. The hymen was twice as thick as shoe leather. A crucial incision was made, the flaps removed, and the patient enabled to marry.

Dr. Byrne asked, why there was no dysmenorrhea.

Dr. Peaslee replied that, by the accumulation of blood, the vagina was distended and the orifice in the hymen opened sufficiently to admit of the escape of the blood. He had seen a number of cases where the external os uteri was apparently completely closed by the application of the nitrate of silver stick, but an examination during a period showed it quite plainly.

Dr. Munde reported a case of

ACCIDENTAL MANUAL RUPTURE OF A SMALL OVARIAN CYST.

The patient was in the Woman's Hospital, suffering from habitual retention of urine. She was only able to empty the bladder by the use of the catheter, which she could use herself. It was determined to dilate the urethra. This Dr. Mundé did, and, while the finger was in the bladder, he felt for the ovaries. The left ovary was of normal size, but the right was as large as an English walnut. While examining it by gentle vesico-abdominal palpation, it suddenly disappeared and could nowhere be found. From this he concluded that it was ruptured. There were no bad after-effects. The patient's retention was not benefited by the operation.

Dr. Peaslee said that, if there were a polycyst and one cyst was ruptured, bad results might be expected, as the fluid was irritating; but if a monocyst, the fluid was bland and would cause no trouble.

Dr. Noeggerath said that he had once done the same thing to both ovaries, one week apart. There were no bad results, but the patient was much benefited.

Stated Meeting, November 20th, 1877.
The President, Dr. Skene, *in the chair.*

Dr. Thomas related the history of a case of

EXTRAUTERINE GESTATION SUCCESSFULLY TREATED BY LAPAROTOMY.

The patient, a negress, æt. 23, married four years, has two children. About seventeen months ago, she became pregnant for the third time. At the fourth or fifth month, both she and her husband distinctly felt the fetal movements. About this fact they were both perfectly positive, being quite familiar with such sensations. These movements were continuous and distinct until the ninth month. At this time labor came on, a physician was called, and, after an examination, he told her that she was not pregnant, but was suffering from a tumor. Labor continued for three days and three nights, the pains being weak and exactly like labor pains. At the end of this period, the pains ceased and have never recurred; neither has she ever felt any further movement of the child.

At this time she presented herself at the College Clinic. She was then very much emaciated—the emaciation, she said, had come on since the labor--but was in fair general health, which she stated had improved of late. On examination, a large tumor was found in the abdominal cavity—as large as the fetus at term, and presenting all the appearances of an ovarian tumor. On deep pressure, however, there could be sometimes felt a sensation as of a solid body moving about in a mass of fluid. From this and from the rational signs and history, a diagnosis of extra-uterine pregnancy was made. Her physician in Newark agreeing in this diagnosis, she was sent to the Woman's Hospital for operation.

Before the operation, to make sure of the diagnosis, some fluid was drawn off and submitted to examination. It looked like ordinary ovarian fluid, with a slight admixture of blood.

One pathologist found ovarian corpuscles in it; but, on a specimen being sent to Dr. Drysdale, of Philadelphia, he declared that the fluid was not ovarian, but ordinary ascitic fluid.

The diagnosis being thus confirmed, and after a consultation with the hospital staff, the operation was undertaken.

The *operation* was begun by an incision just below the umbilicus, extending downward towards the symphysis. On opening the peritoneal cavity, there was a gush of fluid. The fingers were then passed into the cavity, and the cut gradually extended downwards to the symphysis. The finger fortunately discovered the placenta attached to the anterior wall of the abdomen in time to avoid cutting it. A large child was then discovered and drawn out by the legs. The cord was found to be closely twisted, the death of the child undoubtedly being due to this fact. There was no viscus visible in the peritoneal cavity, everything being covered by the membranes. The cut cord did not bleed. The placenta was left in situ, and the wound closed. The patient did well for two days, when the temperature went up to 103.5° ; the pulse became very rapid ; the abdomen soon began to swell, and the patient's condition became alarming. Two sutures were taken out, and the wound found to be united in its whole length. The wound was, however, separated, when a large volume of very fetid gas rushed out ; this escaping, the abdomen went down. The patient was then turned upon her side, and about 8 oz. of extremely fetid fluid poured out, and carbolized salt-water injected into the cavity. In about one-half hour, the temp. went down to 99.5° in the vagina. Since then the temp. has risen to 102°, but has always gone down after an injection. The placenta had not yet become detached. In the last case operated upon before this, the placenta did not become detached until the fourteenth day, but the patient recovered entirely.

At a meeting two weeks later, Dr. Thomas reported on the progress of the case as follows : Since the last meeting, the patient has been doing well. Her temperature is now normal, nearly three weeks after the operation. The placenta has been steadily coming away in pieces the size of an English walnut—fetid, soft, and pulpy, being washed out by the abdominal injections, until it is now appreciably diminished in size, remaining attached to the sides of the wound. There is still a tendency to a rise of temperature every five or six hours if the injections are not kept up. The pulse is still about 100, going up a little at evening, but the patient may be considered out of danger.

At a subsequent meeting Dr. Thomas reported her as well.

Dr. Noeggerath asked what the indication for an operation was in this case.

Dr. Thomas replied that the indication was the presence of a fetus of the seventeenth month of pregnancy in the abdominal cavity. The patient's condition at that time was comparatively good, so that the prospects of her recovery were then much better than they would be if she were left a year or two until she was very much run down in health.

Dr. Noeggerath said that he asked the question for information. He had known quite a number of instances where the fetus had remained in the cavity of the abdomen for twelve to thirteen years and longer without doing mischief. Therefore he had asked whether there was any special indication for the operation. As a rule, in operating for tumors, unless the nature and presence of the tumor endangered the life of the patient, it should not be interfered with. He spoke more from the knowledge he had gained from the study of the literature of the subject than from personal experience.

Dr. Thomas thought that the rule mentioned by Dr. Noeggerath was a rule of the past, which obtained before anything was known of abdominal surgery.

Again, the fact that a certain number of patients had carried their children in this position for a long time without bad results is certainly an exception to the general experience. The mere presence of a child in the abdominal cavity was an almost certain source of danger, sooner or later. This fact, together with the better prospects of success if the operation was done at once, was what had decided both him and the other gentlemen of the Hospital staff, Drs. Peaslee, Barker, and Emmet, in favor of operating. Another point was that the patient was entirely incapacitated for any work or active life by the great size of her abdomen.

Dr. Noeggerath had always compared the presence of an extrauterine fetus of the ninth month of pregnancy to a uterine fibroid which had ceased growing. And since so many uterine fibroids are arrested in their development, and afterwards do no harm, his impression had been the same with reference to the presence of a fetus. That, after it had developed, and did not grow any more, all the harm was done. He did not understand how a fully developed fetus could do any more harm in the tenth year than in the tenth month. It was only an inconvenience.

Dr. Thomas referred to a case where a woman came to him with an extrauterine fetus less than a year old, with very bad symptoms. Her evening temperature was 102° and the pulse often 110 to 120. She had night-sweats, was greatly emaciated, etc. The aspirator drew off a pint of pus and the entire peritoneal cavity was found to be full of pus. She recovered, but came very near dying.

Dr. Lusk thought the success of the operation would depend on the situation of the ovisac. If the placenta with the membranes form an attachment on the anterior wall of the abdomen, as in Dr. Thomas's case, then the abdominal viscera will not be reached until near the end of the operation, and therefore one of the dangers of the operation would be avoided. If, on the other hand, they were attached to the posterior wall of the abdomen, of course the dangers would be greater. If these two classes of cases could be diagnosed, it might be better, in the second class, to await inflammation.

Dr. Thomas said that he saw no way of making a diagnosis such as Dr. Lusk suggested.

Dr. Munde asked if the placenta could not be detected by the bruit or souffle.

Dr. Thomas said that, in the case before them, auscultation and percussion had discovered nothing.

Dr. Lusk said there was an interesting physiological point in connection with this case, and that was that, although the placenta was composed entirely of fetal tufts, it was a very large one.

Dr. Munde mentioned a case seen by him in Prof. Braun's wards in Vienna, when the putting off of the operation had cost the lives of both mother and child, the latter not being extracted by gastrotomy until immediately after the death of the mother from chronic peritonitis, when all efforts to resuscitate the asphyxiated child failed.

Dr. Noeggerath remembered that he had examined the fluid in this case, and had found no ovarian corpuscles or paralbumen. It resembled an ascitic fluid with hemorrhagic deposits.

Dr. C. S. Ward read the history of a case of

RUPTURE OF THE UTERUS DURING LABOR, LAPAROTOMY, DEATH.

"The case which I relate must lose much of interest for the members of the society, from the fact that I am unable to present the specimen which would have given a vivid demonstration of the character of the accident.

Mrs. W., aged 38, fell in labor with her thirteenth child Thursday morning last, at one o'clock, the labor being ushered in by the escape of an immense quantity of liquor amnii. Pains, however, were not fully established until one hour after, at which time her physician first saw her; the breech was found to be presenting, and it was noticed that at each pain the anterior uterine wall bulged in a peculiar manner. During the next four hours pains recurred at regular intervals, but were not notably severe. While in an adjoining room, the doctor noticed that the woman's outcries suddenly ceased, and returning to her, found that a rupture of the uterus had occurred. He could distinctly feel the members of the fetus through the abdominal wall, as well as make out the uterus posteriorly, except that portion which, like a cap, covered the unescaped head. On my arrival, three hours after the accident, I found the poor woman presenting every evidence of one who had suffered from some grave accident. By palpation, I readily detected the fetal body, and could even count the fingers and toes through the abdominal walls with the greatest ease; the uterus was behind the fetus, and reached to the umbilicus. By vaginal touch, I found a scrotum hanging within the os uteri externum. Having rapidly assured myself of the nature of the accident, I immediately performed laparotomy, in the presence of and assisted by Drs. Partridge and Forest, and seizing the left foot, which I found under the peritoneum, I extracted a dead fetus, which weighed eleven pounds. The placenta had been expelled from the uterus, and was lying in the abdominal cavity; the breech of the child was the only portion remaining in the uterus. With the removal of the breech, which acted like a stopple to os uteri and rupture alike, there was a profuse hemorrhage, which was readily controlled by forcing the uterus to contract by the hand. I could now see the extent of the injury. I found a laceration of the anterior wall of the uterus fully five inches in length, beginning at the internal os and extending obliquely upward and to the right; another but much shorter laceration diverged from the lower extremity of the former upward and to the left, thus leaving a triangular flap with the apex downward; the edges of the lacerations were irregular and jagged, while the flap was very thin. The posterior wall, as well as the borders of the uterus, were of normal thickness and firmness, while the anterior wall was very thin and exceedingly fragile, so much so that the needle used for passing the sutures for closure of the laceration passed through a tissue as little resistant as that of a fatty placenta. The flap above alluded to was so thin and fragile that I felt sure that, should the woman live long enough, it would slough, while the attempt to employ a double line of sutures would greatly complicate the closure; I therefore removed the flap with the scissors, and closed the wound with a single line of sutures, thus greatly simplifying the operation.

An interesting and noticeable feature of the case was the extensive lifting off of the peritoneum in the neighborhood of the laceration, as if the peritoneum had not only been the last to give way, but had even resisted the passage of the fetus.

After cleansing the abdominal cavity, I closed the abdominal wound with silver sutures.

So grave was the condition of the patient that I feared she would not react at all, but she lived long enough to develop peritonitis, from which she died two days and a half after the accident.

Microscopical examination proved the uterine tissue to be in an extreme degree of fatty degeneration."

Dr. Lusk reported having met with two cases of rupture of the uterus. In the first, he introduced the hand into the uterus and found the intestines protruded into the cavity. He gently pushed them back and extracted the child. The patient made a good recovery. The rupture was near the fundus, while in Dr. Ward's case it was in the cervix, and therefore the closure of the wound could not be expected.

Dr. Skene made some remarks on

THE TREATMENT OF THE CERVIX UTERI PREPARATORY TO THE OPERATION FOR REPAIRING A LACERATION.

He first remarked that he believed that a majority of the ordinary troubles of the cervix were best treated by the operation for restoration. There was one condition which very much interfered with the operation and often prevented good results, viz., areolar hyperplasia, which was generally found in cases of long standing. This was the only condition which he found to require preparatory treatment. He had tried to relieve this complication, but had not succeeded, by the ordinary methods. Lately he had adopted a plan which promised well, and which he would submit to the consideration of the society; that was, where the laceration was bilateral or double and had existed a sufficiently long time to cause a divergence of the two lips, and where they could be approximated only with some difficulty and were very much indurated. He simply brings the walls together and passes a couple of silver sutures through, on each side of what should be the os externum, and fastens them with a clamp. He then applies a little marine lint (carbolized tow), to support the uterus and protect the vagina. After the operation he found that in even a week the parts inclined to remain together, so that they could be held together, after the operation, with less straining on the sutures. He thought also that he had noticed that the tissues were softer. Dr. Skene said he used the marine lint in preference to cotton because it kept so much better, even after forty-eight hours in the vagina it did not possess any bad odor.

Stated Meeting, December 4th, 1877.

The President, Dr. Skene, *in the Chair.*

Dr. G. T. Harrison read the history of

A CASE OF PARTIAL INVERSION MISTAKEN FOR A POLYPUS UTERI.

"In speaking of the deficiences of physicians, Lord Bacon observes: 'the first is the discontinuance of the ancient and serious diligence of Hippocrates which used to set down a narrative of the special cases of his patients, and how they proceeded, and how they were judged by recovery or death.' While it cannot be considered a fault of physicians of the present age that they fail to report their favorable cases, it may well be questioned if the deficiency noted by Lord Bacon is not still existent so far as concerns the candid narration of cases which are *not* of a nature to redound to the sagacity or skill of the narrator. Cases, however, belonging to the latter category are often of great value, and should not be suppressed. Especially useful are narratives of those cases attended with unusual difficulties, where errors of diagnosis have been committed. And as each case of the kind possesses some individual characteristics, it cannot but prove instructive and profitable to record carefully those of more importance. In view of these considerations, I am inducedto bring before the attention of this society the following case, that my experience may serve as an additional beacon-light to warn others off this dangerous coast.

Anamnesis.—In August last, I was consulted by Miss S., 38 years of age and single, who gave this history of herself. She first commenced to menstruate at the age of 16; menstruation recurred regularly, and there was no deviation from a healthy type, except that she suffered always more or less dysmenorrhea, until last spring a year ago. About that time her menstruation began to be more profuse. This symptom has been growing worse during the past year. About three weeks ago, new symptoms showed themselves, consisting of pain in the hypogastrium, over the sacrum in the inguinal region, and extending down the thighs. She also complains of frequent micturition. Of late these pains have increased in intensity, so as to deprive her of rest at night.

Status præsens.—The patient is a tall woman of large frame, but pale and anemic. Physical exploration per vaginam revealed the fact that the cervical canal was occupied by a polypoid mass, which extended down to the external os uteri, but did not protrude beyond it. The latter was slightly dilated, but not sufficiently so as to enable me to judge of the size of the growth. Bimanual palpation was not attended with any results, as there was a large amount of fat in the omentum and in the abdominal walls, and the latter were more or less rigid. By means of Sims' speculum, a fleshy growth was brought into view, situate just within the external os uteri. Having decided upon the ablation of the neoplasm, I introduced a sponge-tent a few days after my first examination, following it by a second the next day. On the removal of the second tent, about twenty-four hours after its insertion, I found, on examination per vaginam, the patient being under ether, that the os uteri and cervical canal were not as well dilated as I had expected to find them. I observed at the same time that the infra-vaginal portion of the cervix seemed to be unnaturally short. The mass presenting at the external os uteri was ascertained by the touching finger to be a proliferating growth, as it were, from a firm fleshy intrauterine polypus, sessile on a broad basis, and apparently attached to the right side of the body of the uterus, projecting into and filling up the cervical canal. After excising the proliferating mass which was soft and friable, and about the size of a filbert, I seized the fleshy growth, which I took to be a polypus, with a strong pair of vulsellum forceps, and passing this instrument over to the hand of an assistant, I enjoined upon him the duty of exercising firm and steady traction. Guided by the finger I proceeded to the extirpation of the supposed polypus by means of the scissors. On the right, at a short distance within the cervical canal, the finger was arrested by the attachment of the growth, but sweeping the finger over the rounded protuberance and bearing to the left, it penetrated to a greater depth, to the extent of an inch or more.

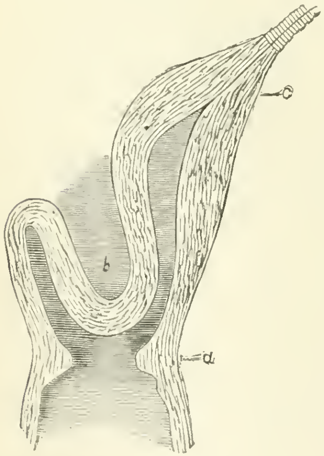


FIG. 1.

That I could not pass the finger into a greater depth I explained by the fact that the growth encroached so largely upon the uterine canal, and by the further fact that sufficient dilatation had not been attained, though the tent apparently entered the uterine cavity. My mind being completely possessed by the idea that I had a polypus to deal with, I was unable to draw the proper inferences from any peculiarities that the case offered at various steps, and which, under other circumstances, might have led me to doubt the correctness of my diagnosis. Thus it was that I could deliberately proceed to the entire extirpation of the rounded polypoid growth, and when, in my last cut, I recognized the fact that I had entered the abdominal cavity, I thought that I had simply a fibroid tumor deeply imbedded in the thickness of the uterine wall, covered by a thin layer of peritoneum, and that the latter had been removed with the tumor. On withdrawing the vulsellum forceps, however, with the extirpated portion held in its grasp, I saw at once that I had taken off the right cornu, a portion of the fundus, and a large segment of the body of the uterus, including also a part of the right broad ligament and right ovary. The patient reacted from the shock of the operation without difficulty. Partial peritonitis was developed soon, but progressed favorably, and the temperature did not rise beyond 103° F. This patient is still under treatment, as she has not yet fully recovered from the effects of the operation. She has now a discharge per vaginam of a muco-purulent character, and occasionally passes clots of blood. There is also some catarrh of the bladder and difficulty of micturition from spasm of the sphincter at the neck of the bladder. This latter may be a reflex phenomenon. Menstruation has recurred several times since the operation. What are the practical lessons now to be drawn from this and like cases? That the difficulties of diagnosis are great, no one of experience will deny; but it cannot be asserted that they are insurmountable. The fault committed is, that a polypus is apt to be assumed on totally inadequate evidence, and the differential diagnosis between inversion and polypus is not at all, or else, not fully discussed. As the inverted uterus is sensitive, and a polypus not, Barnes insists upon the rule that patients should never be submitted to anesthesia for the removal of a polypus. 'Pain,' as he says, 'may give the last warning, and save the patient at the last moment.' This rule I violated. I am, however, not disposed to adopt this direction of Dr. Barnes in toto. The differential diagnosis, I will admit, must be established beyond peradventure, before having recourse to an anesthetic to remove the polypus. That the thorough application of Simon's rectal exploration would have thrown light upon this case, is exceedingly probable. Bimanual palpation ought also to have been more carefully and systematically practised. I mentioned a sign observed in connection with this case, which I deem of importance in a diagnostic point ot view, as I think it will be met with in similar cases (that is, non-puerperal inversions). I mean the apparent shortening of the vaginal portion. For, in proportion as the inverted part descends towards the os externum, the neck must, to a greater or lesser degree, it seems to me, be drawn up out of the vagina, and thus shortened. Another point of interest is the fact that here inversion was caused in the virgin uterus by a very small intra-uterine growth. The mechanism of the production of inversion in such circumstances has been very beautifully explained by Scanzoni.[1] 'Interstitial tumors now and then,' he says, 'in the course of their development, cause fatty degeneration of the muscular fibres of the uterine wall enveloping them, nay, even complete atrophy of the portion of the uterine parenchyma in which they are situated. . . . But if the portion of the uterine wall inclosing the fibroid tumor becomes atrophic, or for any other reason less contractile than the remainder of the organ, and if the tumor already projects into the uterine cavity, in consequence of the contractions excited by its presence, the tumor is forced more and more deeply down towards the orificium internum, the relatively relaxed wall in which it is imbedded is dragged after it, and in this way is depressed.' "

In reply to a question, Dr. Harrison stated that he considered it an interstitial fibroid.

Dr. T. G. Thomas remarked that no error in diagnosis was more excusable than that which Dr. Harrison had related. He knew of two cases of a similar kind, and would mention them in order to counteract what Dr. Harrison had said. One case he had seen with the late Dr. Budd. The symptoms were very much like those seen in Dr. Harrison's case. The tumor was a submucous fibroid. Dr. Budd removed it with the ecraseur, and took out with it one horn of the uterus and a portion of the broad and round ligaments. The patient recovered. The other case occurred in his own practice in the Woman's Hospital. The tumor was suspected of being a sarcoma. The cervix was dilated, and the chain of the ecraseur applied; it broke, however, in a very short time. The tumor was then seized by a forceps, and its removal attempted by evulsion. The assistant who was depressing the uterus felt a distinct indentation, which showed that one horn was inverted. The tumor was very cautiously removed, but a small portion of peritoneum was removed with uterine tissue. The patient recovered. The tumor was examined by Dr. Delafield and pronounced a cancer.

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[1] Vide Lehrbuch der Krankheiten der weiblichen Sex. Organe, S. 141.

Dr. J. B. Hunter read the history of

A CASE OF LABOR AT THE SEVENTH MONTH, WITH DOUBLE VAGINA, AND DELIVERY THROUGH THE RECTUM.

"I was called by Dr. W. T. Bull at 2 A.M., November 29th, to see a case of labor. Found a primipara, 18 years old, between six and seven months pregnant, who had been in labor fifteen hours, the waters having come away twelve hours before. Three weeks ago she had received a severe kick on the vulva, followed by much pain and swelling. On examination, I found the perineum and vulva greatly swollen, and very hard and tense. The entrance to the vagina was concealed by a pediculated tumor, apparently fatty, about the size of a lemon, and would not admit more than the tip of the finger. On passing another finger into the rectum, it was evident that a fetal head lay between the vagina and rectum. With the hand on the abdomen, the uterus could be felt to be partially empty, and contracting forcibly with each pain.

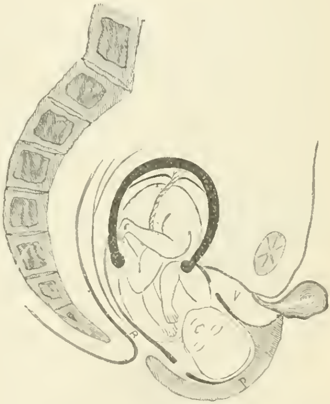


Fig. 1.

Further examination by the rectum revealed a longitudinal rent through which the fetus could be distinctly felt, and it was decided to deliver in that way. The sphincter ani being somewhat resistant, a snip of about half an inch was made in it with the scissors, when a violent pain unfortunately caused a rupture of the perineum as the head passed.

The placenta was detached, and the uterus contracted promptly. There was no hemorrhage at any time. The fetus, which was dead, weighed four pounds.

The rupture of the perineum enabled us, after washing the parts thoroughly, to examine carefully the exposed surfaces of the pouch in which the child was confined. These surfaces had the exact appearance of vaginal mucous membrane, and the lips of the os could be distinctly seen and felt opening into the pouch. What seemed to be the os in the vaginal examination was merely a small opening between the accessible vagina and the *cul-de-sac* in which the head was imprisoned.

This *cul-de-sac* I supposed might be either a second vagina or a distention of the posterior wall of a normal vagina, which had become adherent in its upper portion. Fig. 2 will show the condition I thought might have existed at the beginning of labor.

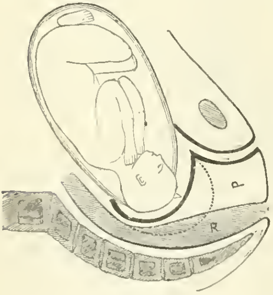


Fig. 2.

The perineum was so very thick and hard that it seemed useless to close it by sutures. The knees were tied together, and the patient left.

I intend, when the time arrives, to restore the perineum, and endeavor to form a septum between the os and rectum.

The peculiar features of the case were:

I. The tumor obstructing the ostium vaginæ.

II. The existence of a pouch below the vagina.

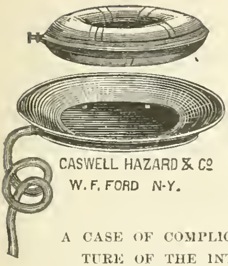
III. The edema caused by violence, which did not, however, appear to have caused the premature labor.

The woman states that intercourse had always been exceedingly difficult."

Dr. R. Watts said that he had a case then under observation somewhat similar and yet not due to inflammation.

The patient, a girl of eighteen, came to him complaining of bladder trouble, and for this an examination was made.

It was then discovered that the vagina was separated by a transverse septum or diaphragm, having an opening in its centre large enough to admit the tip of the finger. The septum was about half-way between the os and the vulva. There was no hardening or thickening of the tissues near it, and no history of previous injury or inflammation.



Dr. CLEVELAND showed a

DRAINAGE PAN FOR THE USE OF HOT VAGINAL INJECTIONS IN THE RECUMBENT POSITION,

which is fully explained by the accompanying cut.

DR. W. T. LUSK related the history of

A CASE OF COMPLICATED PREMATURE LABOR, WITH STRICTURE OF THE INTERNAL OS, OBSTRUCTING DELIVERY OF THE SUCCEEDING HEAD.

"The patient entered Bellevue Hospital five weeks ago suffering from constant vomiting. She was very pale and anemic, her hands and feet swollen; the urine scanty and albuminous, but containing large quantities of hyaline and epithelial casts. She was admitted as a medical case under the care of Dr. Janeway, but was found to be in the seventh month (lunar) of pregnancy. The nausea and vomiting continued and for three weeks her condition was distressing. She could not even retain water so that the thirst was intense.

Dr. Janeway finally asked me to see the case, with a view of bringing on premature labor. Three weeks and a half ago, I introduced a bougie into the uterus to the extent of two inches, which was as far as it could at first be passed, and left it *in situ* over night. As labor was not excited, on the following morning I pushed the bougie to the fundus. In the afternoon I found the cervix a little softened, but not dilated, and labor pains just beginning. I then dilated the cervix somewhat with the finger and introduced the smallest size Barnes' dilator, and left the patient for the night.

The next morning I found the dilator ruptured, and lying in the vagina. I then introduced a medium size dilator, and expanded it to the size of a half-dollar.

In the afternoon I found labor had set in, and the membranes protruding through the os. On watching the patient, it was found that the os internum had dilated only to a very slight extent, so that the protruding membranes, constricted above, assumed a barrel-shape. After my arrival, the pains gradually died out, and in two hours had ceased almost altogether. It was then concluded, in view of the condition of the patient, rather than delay any longer, to empty the uterus at once. To effect this, the membranes were ruptured, a Barnes' dilator introduced, and expansion pushed until the cervix and vagina became one continuous canal. After fifteen minutes of dilatation, it was found that there was no corresponding relaxation. As soon as the dilator was removed, the cervix contracted down to its previous size. The dilator was again introduced and expanded, but it slipped up into the cavity of the uterus. During the pains it was pushed down toward the vagina, but it retreated after the contraction was over.

Dilatation was kept up for an hour, at the end of which time the cervix remained unchanged. Instead of a head presentation, as at first, it was now found that the shoulder presented, and the cord had prolapsed. The head lay on one side doubled over toward the shoulder, where it had evidently been pushed by the dilator as the latter slipped up into the uterus. Without further delay, three fingers were passed into the uterus, a knee seized without difficulty, and version accomplished. As the child was not viable, no attention was paid to its salvation. The breech was slowly brought down in the hope that gradually the stricture of the os internum would give way. The breech and anus entered the cervix properly flexed, but the head, notwithstanding every precaution, was caught by the constricting band at the os internum, just beneath the eyes, and thus further delivery was arrested. I then passed my fingers into the child's mouth to keep the head flexed, and made traction upon the shoulders. The cervix proved to be extremely ductile, so much so that by tractions upon the child it could be drawn down to the vulva. It did not, however, in the least relax its grasp on the head. As tractions were being made on the child, the neck broke. The forceps were then tried. It was found possible to introduce one blade, but the contracted os forbade the introduction of the other. I thereupon took two crotchets, thinking that if I applied the power directly to the child's head it would act as a wedge, and help in the dilatation of the canal, for I had already found that I could easily pass the hand through the constricting os, and could dilate it just as I would a thick band of rubber. The bones of the head proved too soft to give a firm hold; I therefore tried very cautiously to pull down the shoulders, while a crotchet was at the same time inserted into the child's mouth. The jaws and shoulders both gave way, and the head disappeared into the cavity of the uterus. One hand was then easily introduced into the uterus, and forceps applied to the head. The delivery of the head was accomplished without special difficulty. The membranes were ruptured at five o'clock, and the head delivered at seven. The patient did well during the operation, the pulse was good, and the uterus well contracted. She was visited by the house physician five hours later, who found her in good condition. At half-past four the next morning, the nurse found the bed soaked with blood and clots within the vagina and uterus, and the patient apparently dying. Dr. Chadwick, the house physician, was called, and proceeded at once to secure uterine contractions. To this end he gave hypodermic injections of ergot, cleaned out the uterus, and applied ice over the abdomen. During the day the patient had small quantities of brandy every few minutes. Gradually the pulse improved. At noon, a strong infusion of tea was administered, and towards evening some milk was taken, the vomiting having fortunately ceased. She gradually improved until the sixth day, when on visiting the patient, I found her with a temperature of 104° and a very rapid pulse. There was an extremely fetid discharge from the uterus. The uterus was at once washed out with carbolized water, and in an hour the temperature fell to 101°. The next morning the temperature was normal, but in the evening it went up to 103½°; a uterine injection, however, brought it down again to 100°. During the night some blood clots formed in the uterus, which was a good deal relaxed. These were due, apparently, to the washing away by the injection of the thrombi in the vessels at the placental site. These clots were expelled after violent labor pains, following which the patient's condition became worse than ever. The pulse could hardly be felt, hands and feet became cold, and face cyanosed and covered with a cold sweat. She presented all the appearance of rapidly approaching death from septicemia.

She was ordered by Dr. Chadwick brandy and spirits ammoniæ aromat., under the use of which stimulants she gradually rallied. Now she eats three meals a day, is strong, and has almost a normal temperature.

She has yet what she had in the beginning, some mental disturbances, a sort of puerperal insanity, due probably to the anemia and Bright's disease, but there is no reason to suppose that she will not soon be in fair health."

In summing up the case, Dr. Lusk said it was interesting, because he had never felt before similar contractions of the os internum, in a case where the uterus above the point of constriction was in a flaccid condition. Commonly, when the cervix is rigid, the lower uterine segment is found to be so likewise. Further worthy of note were the many operative procedures which in turn had to be resorted to to finish the labor; the late occurrence of the post-partum hemorrhage, which was somewhat unusual; then the symptoms of acute anemia and collapse following the hemorrhage; later, the septic symptoms at once arrested by disinfectant injections, and finally the secondary hemorrhage, apparently due to the action of the intrauterine douche.

In answer to Dr. Skene, he replied that patient had passed forty ounces of urine during the last twenty-four hours. The casts had entirely disappeared.

In answer to Dr. Gillette, whether the constriction was below or above the os internum, and included the ears, or whether he could feel the ears, he said the stricture was confined to the os internum; did not know about the ears; the face was for the most part inside the cervical canal; we noticed on examination the manner in which the band grasped the face below the eyes. There was no deformity of the pelvis; head was very small; was the sixth month of pregnancy; woman had been previously delivered at full term of four living children. In answer to Dr. Pallen, said the abdomen was not pendulous; that there was no anteflexion of the uterus.

Ten weeks after confinement, the patient died somewhat suddenly. She had for the most part done well, and was looked upon as out of danger. One day she got greatly excited at my refusing her a plate of corned beef and cabbage. She cried bitterly, and declared she would get out ot bed and help herself. Peritonitis set in the next day, which soon proved fatal. Uterine organs at the autopsy were found healthy. A small abscess, the size of an orange, occupied the right iliac fossa. The perforation of this abscess, and the partial escape of its contents into the peritoneal cavity, seemed to have occasioned the fatal result. From the time of her entrance into the hospital, the patient had steadily prayed that she might never recover.

Dr. T. G. Thomas reported

A CASE OF LAPARO-ELYTROTOMY.[1]

Dr. J. W. McLane remarked that he had voted with the minority at the consultation, being strongly in favor of delivery by the natural passages whenever that could be accomplished, and in this case all agreed that it was possible, and opposed to any operation which would involve any additional risk to the mother, for the sake of saving the child. The degree of contraction of the conjugate diameter at the brim was not such, in his judgment, as to demand an operation of so grave a nature as laparo-elytrotomy. The pelvis, in this instance, measured 2¾ inches in the conjugate diameter at the brim, while the transverse diameter was nearly normal. At the outlet the lateral measurement hardly exceeded two inches, yet the antero-posterior diameter was not very much diminished. The narrowing of the conjugate diameter of the brim was due to the jutting forward of the sacral promontory, and was not increased by any backward depression of the symphysis pubis. The feet of the child were not in their usual situation in breech cases, near the nates, but the legs were extended so that the toes were close to the face, a condition under which labor may become arrested or difficult even with a normal pelvis. This situation of the feet prevented the bringing down of one or both of them, and all attempts at delivery by traction through the contracted brim. He stated that his own preference was decidedly in favor of embryotomy, and he believed that delivery could have been effected in less than an hour, with less risk to the mother than by gastro-elytrotomy. It is true the child was alive, the pulsations of the fetal heart being audible; but that circumstance ought not to influence us in the choice of an obstetric operation. The life of the child ought to be practically disregarded and never weighed against that of the mother. He believed it morally wrong to subject the mother to any risk for the sake of the possible chance of saving her offspring; and even if the probability of saving the child were ever so great, he would not feel himself justified in subjecting her to such risk. The operation of laparo-elytrotomy ought not to be considered as a rival of embryotomy, but rather of the Cesarean section; never to be performed from choice, but only from stern necessity. It ought not to come into competition with embryotomy, craniotomy, or cephalotripsy, but only to be thought of as a means of delivery when the latter are impracticable, and when we are driven to the last resources of our art.

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[1] See Original Communications in April Number, page 225 *et seq.*

No one will deny the possibility of delivering a child of ordinary size by embryotomy, through a contracted brim measuring $2\frac{3}{4}$ inches, and without much risk to the mother from the operation itself; for, if the conjugate diameter measures 3 inches, we can deliver by version an ordinary fetal head. To exclude embryotomy from this territory, would be to discard it as an obstetric operation. But it may be urged that the maternal risk from laparo-elytrotomy is no greater than from embryotomy. Experience alone can decide this. The former is comparatively a new operation, and has only been performed a few times. But it seems that there are dangers inseparable from it, which far exceed those attaching to embryotomy, when performed in a pelvis of only moderate contraction. Dr. Thomas himself has pronounced laparo-elytrotomy a grave operation. It certainly cannot be regarded as a trifling injury to the vagina, to cut or tear it to such an extent as to allow the passage of a child at full term. The proximity of the bladder renders that viscus liable to injury, as experience has proved, and from such injury there follows the danger of infiltration of urine and sloughing of tissue. The risk of hemorrhage from the vessels of the vagina is to be borne in mind, while after the operation the patient is left with a large suppurating wound near the uterus, rendering her liable to suffer from septicemia.

These are certainly not trivial dangers, to run for the chance of saving the life of an unborn child. In cases like this, therefore, a less dangerous operation ought to be our choice, even though it necessitated the sacrifice of the child. By embryotomy no wound is inflicted upon the maternal tissues, nor are any hindrances placed in the way of the complete recovery of the mother from parturition.

Dr. Lusk remarked that, two years before, he had had a patient with angular curvature of the spine which had produced a kyphotic pelvis, in which there was extreme narrowing at the outlet. The diameter between the tuberosities of the ischia was not over $1\frac{3}{4}''$; while the antero-posterior diameter of the outlet did not exceed $2\frac{1}{2}''$. He talked with a good many of his professional brethren about the case, and all thought Cesarean section should be performed. Fortunately, before the time for the operation came, he was called out of town, and left the case in the charge of Dr. I. E. Taylor, who had seen the case with him two or three times before. Dr. Taylor disagreed *in toto* with regard to the propriety of performing the section, and instead performed cephalotripsy. He succeeded in extracting the child, and the woman was up and well in eight days after the operation. This case made a deep impression upon him and somewhat unsettled his views as to the necessity of Cesarean section in cases of extreme contraction.

Dr. Skene said that he was intensely interested in this operation, and he would like to see the question which had been raised regarding its merits settled beyond a doubt. He would never agree to the dictum that the life of the child was of no consequence. What is a deformed rachitic woman in comparison with a healthy, vigorous child? The latter is certainly of as much value and importance as the other. He had no authority for this statement but his own respect for human life.

He believed that the parents would be just as well satisfied with a live baby and a dead daughter, as to have a live daughter and a dead grandchild, but he did not think they would consent to have either sacrificed to save the other. He did not think it was a question of cephalotripsy in this case, but of embryotomy, as the breech presented. And so far as he had any experience, he did not think the condition of the woman after that operation was any better than after laparo-elytrotomy. The fact that they sometimes recover after evisceration or embryotomy, as related by Dr. Lusk, proves in favor of an operation in which the child is lost, compared with a delivery in which both are saved. In his first successful case of laparo-elytrotomy, where the child was delivered by version, the mother weighing 109 pounds and the child 10½, the patient was able to sit in a chair ten days after. By the operation the life of the child could be certainly saved if it was healthy and vigorous. And regarding the mother, the operation is not so very dangerous to her. There was a simple wound through the abdominal wall (not involving the peritoneum) and the vagina, and these wounds heal promptly. There was no necessity for having the wound extend into the bladder in all cases, and if this should happen, the vesico-vaginal fistula tends to close of itself, and if it fail to close, it is a simple operation to close it. He thought that the proportion of mothers lost by embryotomy would be quite as large as those lost by this operation. It is easy to talk of performing craniotomy and embryotomy with facility, but he had yet to see these operations performed without wounding and bruising the mother, and statistics show that they are frequently fatal to her.

Dr. Thomas, in reply, said that at the consultation in this case the question lay between Cesarean section and craniotomy. The unanimous vote was in favor of the latter, until laparo-elytrotomy was proposed. Then, without much discussion, without dissent from Dr. McLane or any one else, it was unanimously decided to adopt this procedure. The views which Dr. McLane has now expressed had been born of the last night, or if they had existed at the time of the consultation, he had done himself great injustice in never having, even in the feeblest tone, alluded to them or maintained their validity.

The questions with which Dr. McLane had dealt in so desultory a manner to-night were so trite, had for a century past been so fully considered and been so carefully discussed by the ablest minds engaged in the study of obstetrics, that he regarded a reply on his part at this moment entirely uncalled for. Time would prove whether they did not need revision in the present advanced state of the obstetric art, and to time he was willing to leave the matter.

This gentleman had said that in a question of this kind "the life of the child should be regarded as of no consequence." He was surprised by the maintenance, in the nineteenth century, of a dogma which was barely excusable in a bygone age, and he trusted that this should not go forth as the dictum of the New York Obstetrical Society.

He would, in closing, suggest a reflection which must already have presented itself to many of those present to-night: it was, that every magnanimous and generous mind would be willing to accord every possible indulgence to a new operation, the aim of which was certainly good, and the results of which, if it proved successful, would be the advancement of the obstetric art. To require of such a procedure all that was demanded of operations which had for centuries been fully elaborated by the labors of thousands of intellects working in unison was hardly, he thought, in keeping with that generous sympathy with undeveloped efforts which ordinarily characterizes the profession of medicine.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Reported by W. H. H. Githens, M.D., Secretary.

Stated Meeting, January 3, 1878.

The President, John H. Packard, M.D., *in the Chair*.

The following officers were elected for 1878:

President, John H. Packard, M.D.

Vice-Presidents, Lewis D. Harlow, M.D., Richard A. Cleemann, M.D.

Secretary, W. H. H. Githens, M.D.

Teasurer, D. Murray Cheston, M.D.

Librarian and Curator, Wm. H. Parish, M.D.

Publication Committee, Wm. Goodell, M.D., John H. Packard, M.D., James V. Ingham, M.D., R. G. Curtin, M.D.

Councillors, H. Lenox Hodge, M.D.; Robert P. Harris, M.D., Chas. H. Thomas, M.D., James V. Ingham, M.D.

Stated Meeting, February 8, 1878.

The President, John H. Packard, M.D., *in the Chair*.

Dr. W. H. Parish exhibited the bony pelvis with its included soft parts, removed from a patient who had died from

SUPPURATION FOLLOWING PELVIC CELLULITIS,

and related the history of the case as follows:

"H., a colored woman about 35 years of age, was admitted to the Philadelphia Hospital about the middle of February, 1878. Her mind had evidently been shaken by intense and prolonged suffering. She gave the following account of herself: For several years she had suffered greatly with dysmenorrhea. About two years ago, an operation for the removal of the infra-vaginal portion of the uterus was performed in one of the Hospitals in Philadelphia. I have since learned that the amputation was by means of the galvano-cautery. A few days after the operation, there was a considerable flow of pus from the vagina, and the patient thought an abscess had burst. She was confined to bed for several weeks, but in three months was able to resume her occupation, that of a seamstress, using a large sewing-machine. Eventually she was forced, because of pelvic pains, to desist from work, and to seek admission into the Hospital of the Women's College of this city. After remaining there for a number of days, she was sent to the Philadelphia Hospital. When first seen by myself, she sufered continuous and great pain in the lower abdomen; there was great exhaustion, the patient not being able to sit up in bed. Pulse 120, temperature 102° F. Urination frequent and painful, the urine rapidly undergoing decomposition. Defecation was accompanied with pain, and the evacuation was horribly offensive.

During the first few days after admission, there was no thorough physical examination, owing to the extreme prostration and great tenderness. A few days prior to death, an examination revealed the following condition: The uterus was low down in the pelvis and fixed. There was an absence of the infra-vaginal portion of the cervix. The opening of the cervical canal was small, with dense tissue about it. The sound passed about 2½ inches, anteflexed; there was slight uterine leucorrhea. The pelvis was filled with a dense mass, investing the uterus, especially laterally and posteriorly. This mass was immovable. There was a bulging of the posterior wall of the vagina about its fundus, the bulging giving an obscure fluctuation. There were no nodules in the vaginal wall and none on the uterus. Examining the abdomen externally, a tumor reaching quite to the umbilicus was easily outlined, extending into either iliac region, more especially into the left one. The mass was irregular on its surface, somewhat doughy, but resistant on deeper pressure. There was no fluctuation in the mass. The question of diagnosis rested between diffuse carcinoma and pelvic cellulitis. I had the patient brought to the clinic before the class, and for the following reasons pronounced the case one of pelvic cellulitis, with probable suppuration. The cervix had certainly been amputated, and amputation is seldom resorted to, save for hypertrophic elongation and carcinoma. I did not think it could be carcinoma, because of the absence of a history of uterine hemorrhages and of offensive discharge, and the absence of nodules in the cervical end of the uterus and in the vagina. The existence of the exquisite tenderness argued against carcinoma, as did also the large size of the mass. The fever, a history of rigors, the continuous nature of the pain, the tenderness, the immobility of the uterus and of the entire mass, its dense consistence, the suspicion of fluctuation posterior to the vagina, the offensive fecal discharges, and the frequent and painful urination—all combined in pointing to pelvic cellulitis. I also expressed a belief that the mass, apparently so dense and free from fluctuation, contained deep in it an abscess, believing that inflammatory deposit could scarcely be so extensive, exist so long, and so greatly rack the whole system without suppuration having occurred. Desiring to hold a consultation with my colleagues and to confer with the surgeon who amputated the cervix, I deferred any operative interference until my next visit to the Hospital. On the next day, however, after an attack of vomiting of blood, the patient died.

At the autopsy, the abdomen being opened, the surface and upper portion of the mass were seen to consist of a thick omentum and of portions of the small intestines; and filling the pelvis and extending above it a mass of inflammatory lymph, evidently originating underneath the peritoneum, though by peritoneal inflammation all the pelvic viscera had been matted together with also the omentum and portions of the small intestines. Cutting into the mass posterior to the uterus, Douglas' pouch was found converted into a closed sack, and containing about ten ounces of offensive pus. From the appearance of the right broad ligament, it seemed as if an abcess had formed between its folds and had later burst into the retro-uterine space. It was this abscess that gave the sense of fluctuation posterior to the uterus—an obscure fluctuation because of the lymphic deposits over the bottom of this space. In the left broad ligament, there was another abscess containing about six ounces of pus. The uterus was somewhat enlarged and dense, and grating when incised. A trocar, properly directed, could have evacuated either of the abscesses, and had the patient been alive at my next visit to the Hospital, this would have been attempted, with a possibility of saving the woman's life. This case would have been even more instructive, could we have determined, from the meagre history obtained, whether the cervical amputation stood in the relation of cause to the pelvic cellulitis."

Dr. Albert H. Smith remembered this patient as having been admitted into the Woman's Hospital, by Dr. J. M. Keating, as a case of chronic peritonitis. She was, however, so violent and abusive in her language and actions that she was considered insane, and it soon became necessary to discharge her. The co-existence of the two abscesses made this case a remarkable one. These abscesses probably had their origin in the sacro-lumbar ligaments, or they may have been primarily ovarian. Dr. Smith spoke of a case in which the general symptoms resembled those of the case described by Dr. Parish. A careful practitioner had used Atlee's dilator to dilate the os uteri, for the cure of sterility ; he made but one application of the instrument, but its use was followed by metritis, which was very obstinate and resulted in the formation of an abdominal tumor as large as a seven months' pregnancy. It was preceded and accompanied by the symptoms of peritonitis and pyemia. The tumor was isolated and circumscribed, and apparently without adhesions. Vaginal examination revealed a slight fluctuation behind the posterior wall of the vagina. By means of the aspirator, a pint of pus was withdrawn ; this was followed by great immediate relief, but in a week the tumor was quite as large as before. Dr. Smith now introduced Fitch's dome trocar attached to the aspirator and withdrew about a quart of offensive pus. Becoming alarmed at the escape of gas through the trocar, the completely scaphoid form of the abdomen, and the existence of lateral adhesions, now evident, between the tumor and the abdominal wall, he hastily withdrew the trocar without using any disinfectant or cleansing washes. The patient made a steady progress to full recovery, with a slight enlargement of the uterus. The pus seemed to come from an abscess in the posterior wall of the uterus.

Dr. Albert H. Smith read for **Anna E. Broomall, M.D.**, a paper on the Operation of Episiotomy[1] (Labial Incision) as a Preventive of Perineal Rupture in Labor.

Dr. Eugene P. Bernardy remarked that although he had never been connected directly with a lying-in hospital, he had had considerable experience in obstetrics. He supposed he had delivered about a thousand women in private practice, amongst the number, many primiparæ. He had never yet seen a case where, in his judgment, he considered it necessary to resort to any cutting operation to enlarge the vaginal outlet ; chloroform and ether had in his hands accomplished all that could be desired.

He had had cases where rupture was imminent ; by preventing the patient from bearing down and employing "patience," he had eventually delivered them safely.

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[1] See Original Communications in this number.

While listening to Dr. Broomall's paper, one cannot help noticing at once the enormous percentage of cases in which the labial incisions were considered necessary to save the perineum (59 cases in 200 confinements). The doctor must have had an unusual number of rigid perinea, rarely seen in private practice.

Dr. Bernardy said he must confess that his belief was, that Dr. Broomall has most certainly operated with needless frequency, which only can be accounted for by undue impatience and the teaching of the Vienna school.

He objected to the operation, for he believed it needlessly exposed the patient to septic poisoning.

He now recalled a case where recently he was called upon, in consultation, to apply the forceps to hasten a delivery retarded by a rigid perineum; he decided to try the effects of ether, and by keeping the patient well under its influence for nearly two hours, delivery was accomplished without instrumental aid, with safety to the mother and child.

In the present era, we often forget that maxim, which can be summed up in one word, "*patience*."

Dr. J. L. Ludlow inquired about the duration of the labors in which the operation had been resorted to, and if the operator had been unduly impatient. He had felt called upon in some cases to nick the edges of the cervix uteri for rigidity.

Dr. A. H. Smith had always been an opponent of the use of the knife in obstetric practice, but must acknowledge its beneficial effect in Dr. Broomall's hands. The proportion of cases requiring operation would undoubtedly have been smaller in private practice. The majority of the hospital obstetric patients are primiparæ, whose laborious habits of life have rendered their tissues rigid and unyielding. Dr. Clay, of Manchester, reports seventy-five per cent of lacerations of all degrees. This percentage is unusually large. But if in any series of cases 75 per cent of lacerations be found, surely preventive measures are not out of place in 25 per cent of a total composed almost entirely of primiparæ. Dr. Smith, when a student, had been told that a laceration was an opprobrium, the result of carelessness, but his own experience had taught him a very different lesson. Dr. Matthews Duncan had observed *spontaneous laceration of the perineum occurring after complete delivery*. This circumstance arises from furrows or splits of the wall of the vagina and mucous surface of the perineum, caused by the descent of the head. These partial lacerations may be made complete by the passage of the shoulders, hips, or even the placenta. If such consequences—accidents—can be prevented by lateral incisions, it is a good reason for their employment. In private practice, the difficulties would be very great. In a case in which the doctor had been engaged that afternoon—an occipito-posterior position—in which he had been compelled to resort to the forceps, the cord descended with the head, and fearing asphyxiation of the child, he made haste to deliver the shoulders, and so ruptured the perineum, after the head had been safely extruded. Lateral incisions would doubtlessly have prevented this undesirable accident.

TWO CASES OF PUERPERAL CONVULSIONS.

Dr. Jos. V. Kelly related the following histories.

"Case I.—Mrs. H., primipara, a small-sized, spare woman, weighing in her non-pregnant condition about ninety-five pounds. I was called to see her at 4.30 A.M., July 21st, 1877. The midwife, a woman of extended experience, had sent word by the messenger that Mrs. H. had had a fit. On entering the room, I found her breathing stertorously and quite unconscious. A few moments after my arrival, she became convulsed, and this I learned was the fourth seizure. This convulsion was general in extent, was quite violent, and either during this or the preceding seizure the tongue was badly bitten. After the convulsion had ceased, there was stertor with complete unconsciousness. On examining per vaginam, I found the head on the perineum, and immediately applied the forceps and delivered, tearing the perineum slightly. The delivery exercised no effect upon the convulsions, and after the next seizure, which occurred a few minutes after delivery, I injected $\frac{1}{3}$ grain of morphia subcutaneously. This failing to arrest the fits, I next bled to 16 ounces, and attempted to inject chloral ʒ ss. into the rectum. As the syringe did not work well, I failed to inject the whole amount of the chloral. The fits still continued with undiminished severity, and I again gave $\frac{1}{3}$ grain of morphia hypodermically. All this time there was not the slightest return to consciousness, the fits alternating with complete stupor and stertor. At 7 A.M., I again gave $\frac{1}{3}$ grain of morphia as before (making in all one grain) and after this the convulsion ceased.

The pupil at this time was contracted, though not to a pinhole, the pulse dropped to 120—it had previously beat 140—the breathing became less noisy, and I thought the patient, though in extreme danger, might recover. I saw her again at 10 A.M., and there was no change, though the pulse was only 115. At this visit, I inserted two silver sutures in the torn perineum, and noticed that she winced during the insertion of the needles. The skin was made to act freely by extra covering. I may mention here that no attempt was made to give remedies by the mouth by reason of her unconscious state. At 1 P.M. she died, 10 hours from the first convulsion. Just before death she opened her eyes, and exclaiming, 'I am going,' immediately expired. With this exception, she never spoke from the time of the first seizure. There was no autopsy, and I regret to state that no urine was obtained for examination.

I subsequently learned that Mrs. H., during her maiden life, had had several fits, and also that, for several months before term was completed, cerebral symptoms were marked and severe. These consisted of severe headache and marked dizziness, so that she was compelled frequently to sit down to avoid falling. She also complained of seeing bugs before her eyes and other similar objective delusions.

The notes of this case furnish, I think, a good text for the discussion, not only of the curative, but also of the prophylactic treatment of puerperal eclampsia. The latter, I think, is the most important. Had Mrs. H. sought and received proper medical treatment (by which I mean thorough venesection) before labor, this sad narrative would perhaps not have been required.

CASE II.—Mrs. W., æt. 41. Has had eight living children, and three miscarriages. I was called to see her at 3.30 A.M., August 25th, 1877, and learned that she was then in the eighth month of her ninth pregnancy. She had complained of headache during the previous day, and had vomited twice. One convulsion occurred before my arrival, and she was suffering from the second when I entered the room. I immediately bled her to 20 ounces. Half an hour later she had a third fit and I gave $\frac{1}{3}$ grain morphia hypodermically. Shortly after this, a fourth fit occurred, and I gave chloral hydrate ʒ i. by enema. I drew off some urine which was highly abuminous. After the injection of the chloral, there was no return of the convulsions until 1 P.M., when she had another fit, and I again gave chloral hydrate ʒ i. by enema. She had three fits between 1 and 2 P.M., and at 2 P.M. she received chloral ʒ i. by enema. After this no fits. Patient stupid, and mostly unconscious. At 3 P.M. gave by the mouth chloral grs. xx., pot. bromid. grs. xxx., and repeated the dose at 6, 8, and 11 P.M. and at 2 A.M. of August 26th.

August 26th.—Patient had a restless night, was at times delirious, with intervals of consciousness. Had one stool, and passed one pint of urine. Is now fairly conscious. Pulse 120. Had chloral grs. xx. and pot. bromid. grs. xxx. at 10 A.M. and 12 M. Passed urine in bed and had two large stools. Evening: Is conscious, complains of dizziness. I ordered milk diet and watermelon seed tea: she passed a good deal of urine, though still involuntarily. Has slept a good deal to-day. At 10.30 P.M., I gave chloral and bromide as before.

August 27th.—At 3 P.M. she was taken with labor pains, and at 5 A.M. the fetus was extruded dead; the placenta followed in due time, and there was no undue bleeding.

Evening.—Is improving; vision is bad; has objective delusions.

She slowly improved and in two weeks was apparently well, her treatmant consisting of a milk diet and Basham's mixture."

Dr. Wm. H. Parish inquired if the convulsions occurring prior to marriage in Case I. were epileptic in their character.

Dr. Kelly replied that the history was not of a character to warrant a decided answer. The convulsions were probably of the character generally met with in childhood. Dr. Kelly inquired if puerperal eclampsia was more common now than when it had been customary to bleed during the latter months of pregnancy.

Dr. J. L. Ludlow replied that, when he was a young man, the lancet was freely used and convulsions were quite as common as now. He did not think that bleeding in general produced a good effect. Many women were undoubtedly injured by it. In true plethora, it might be beneficial. The present conservative plan of treatment is by all means the best.

Dr. R. G. Curtin related the following history of a case of

SUDDEN DEATH FROM PULMONARY HEMORRHAGIC INFARCTION ELEVEN DAYS AFTER LABOR.

"Mrs. A., aged 38. The mother of seven children. She was confined at 10 A.M., Nov. 8th. Dr. E. L. Evans, who attended the case, found that the child had been born before his arrival, the labor having been rapid and natural.

After the labor, she complained of hemorrhoids for a few days, and profuse sweats the fourth and fifth days; no other unpleasant symptom occurred, the doctor ceasing to attend her on the ninth day.

On the 19th of November, eleven days after her delivery, she died, under the following circumstances. At six o'clock in the morning, she called her husband to help her up on the bed-pan for the purpose of passing her water. She complained of feeling weak, and he laid her down and went down-stairs. Returning in half an hour, he found her dead, in the same position in which he had left her.

Post mortem, 24 hours after death.

Heart healthy and free from clots.

The lungs were covered with dark livid spots, which were in some cases ecchymotic in character, others seemed to be clots in the lung-tissue, and on touch they were found to be quite hard, and on section a black circumscribed clot was found in the tissue beneath the surface. In some cases the ecchymoses followed the lines of blood-vessels.

The size of these spots varied, some were quite small, while others were as large as walnuts. They were mostly located in the middle and posterior parts of the lungs.

On dividing the pulmonary artery, many of its smaller branches were found to be plugged up with dark currant-jelly clots, which clots projected from the severed vessels.

In examining the reports of this society, I find that one case of sudden death following an abortion has been reported by Dr. Cleemann (Oct. 7th, 1869). This case gave rise to some discussion on the subject; the view taken by the society was that sudden death following labor was owing to either heart-clot or cardiac syncope.

I am inclined to the opinion that in many cases called pulmonary congestion, collapse with dyspnea, cardiac syncope, etc., the real cause of the trouble is pulmonary infarction or thrombosis. At the meeting of this society on March 6th, 1873, Drs. Ludlow, Ellwood Wilson, and John S. Parry reported cases of pulmonary apoplexy following labor. In the discussion of the subject, Dr. Wilson elicited the information that all the cases reported had albuminuria; the albuminuria was thought to be, by some members present, the cause of the pulmonary symptoms. In Dr. Ludlow's case, the dyspnea came on the day after delivery, was followed by albuminuria, and one week later, there was swelling in the left leg with phlebitis.

With the case before us, we can easily imagine that the cases just alluded to were cases of thrombosis. The dyspnea was caused by the interference with respiration from a plugging up of some of the pulmonary arteries.

Thrombosis of the renal vein producing congestion of that organ, albuminuria is developed. In Dr. Ludlow's case we can see that phlebitis of the leg might result by a plugging up of the vein.

In these cases, the clot is supposed to be formed in the uterine veins. The clot may go down the veins of the leg by extension, or it may plug up the vein and prevent the flow of blood, giving rise to symptoms of edema and perhaps phlebitis followed by septicemia. The clot may extend up to the renal veins, or the interference to the passage of the blood through the lungs might produce congestion of the kidneys and consequent albuminuria. A piece of the thrombus becoming detached, would naturally float along the blood-vessels which are constantly increasing in size towards the heart, and passing through the heart to the pulmonary artery which is constantly decreasing in size from subdivision, it finally comes to a vessel that it cannot pass through, and is consequently lodged. This obstruction to the circulation must interfere with the functions of that portion of the lung, giving rise to sudden dyspnea or death."

DR. CURTIN also related the following history of a case of

PULMONARY HEMORRHAGIC INFARCTION IN A CHILD, FOLLOWING A SLIGHT INJURY TO THE LEG.

"R. W., two years old. On the 13th of January, he fell on the ice. No complaint followed the fall; he went around as usual the next day. Twenty hours after this occurred, on being lifted from a chair, he complained of a pain below the right knee, on the inner side of the limb. The next day, Dr. E. L. Evans, the family physician, was sent for, and he found the child unable to stand, the pain was so great. He compared the two legs, and found the right one a little swelled at the seat of pain; this was all the change he noticed.

On the 16th (three days after the fall), the leg was found to be swollen half way up the thigh and down to the toe. The foot was slightly everted, and there was some discoloration down the inside of the leg. The child was suffering greatly all this time from the pain. The doctor was called that night to see the child, but when he arrived, it was dead. The fall of the child was not thought of until after the child's death.

Post Mortem.—The right leg and thigh were found to be much swollen. The foot was strongly everted. The heel and inner side of the leg, and the upper part of the thigh directly above, were much discolored. An incision into the vein, at the point injured, revealed a clot which plugged up the vessel. The abdominal veins coming from the affected limb were without clots.

The lungs were found to be covered with ecchymotic spots, and inside of the lungs hard nodules were found. The nodules on section were found to be extravasations of blood into the lung-tissue. In the centre of these nodules, the lung tissue had begun to break down, and as the blood ran out, cavities were exposed to view."

DR. JOHN GUITERAS called the attention of the society to a singular fact in connection with infarctions of the lungs. The congestion is found in the blood-vessels beyond the clot, and it is on the distal side of the original clot that the ruptured vessels are found. This circumstance is probably due to the fact that a free anastomosis exists between the pulmonary capillaries proper and the bronchial arterioles, and arterial blood passes from the latter into the former, where its passage is resisted. The pulmonary congestion following transfusion is perhaps of similar origin; arterial blood being thrown into the veins and passing through the heart direct to the lungs, through which it does not pass freely.

Stated Meeting, March 7, 1878.

The President, John H. Packard, M.D., *in the Chair.*

Dr. R. G. Curtin exhibited to the society a

HEMATIC CYST.

The specimen had been given to him by Dr. Troutman, of Philadelphia, with the following history.

"Mrs. H. C., ætat. 29, the mother of three children, was rather anemic and often hysterical. During March, 1877, she noticed a dirty grayish discharge from the vagina. On March 20th, 1877, she had a profuse hemorrhage. At this time she was nursing a child a little over a year old, and 'had not changed since its birth.' The hemorrhage was thought to be a miscarriage, and after recourse to the usual remedies, the bleeding ceased. The next day there was a slight return of the bleeding, accompanied by violent hysterics.

On the 24th of March, she had another severe uterine hemorrhage, when the doctor examined her and found a tumor which he removed by the hand after a few twists.

After this time she rapidly recovered, and is now almost ready to be delivered of another child. The tumor was pear-shaped, about three inches long, and its greatest diameter was two inches. The end that was attached to the cervical canal was pointed and covered with a fibrinous envelope. The whole of the tumor was covered by a shaggy coat of organized fibrine, which was easily separated into layers.

On section, the walls were found to be about half an inch thick, and inside was found a cavity about two inches long and three-fourths of an inch in diameter; the cavity did not communicate with the attachment. On the sides of the cavity were found a number of brownish-black rounded elevations projecting into the cavity, giving it the appearance of the inside of a geode of black hematite iron ore.

A microscopical examination by Dr. Seiler proved it to be an organized clot."

Dr. A. H. Smith spoke of a case that had occurred in the practice of Dr. Parrish, Burlington, N. J. The patient, a lady seventy-two years of age, had suffered from occasional slight attacks of uterine hemorrhage for three months, but they were not so severe as to induce her to submit to a digital examination. The occurrence of a severe hemorrhage overcame her scruples, and the Doctor on examination discovered a pyriform tumor, three inches across by five inches in length, fleshy in texture, and hanging from the uterus by a pedicle. After the removal of the tumor, there were no further symptoms of disease. This tumor was found to be a solid, laminated blood-clot.

Dr. Curtin exhibited a

FIBROID POLYPUS OF THE UTERUS,

and related the following history:

"Mrs. E. G., mother of one child. She had a miscarriage at fifth month, about four years ago. Soon after this, she had attacks of menorrhagia; these attacks increased in severity and frequency until I was called to see her, at which time she was almost exsanguinated, dropsical, pallid, and feeble, being unable to rise. Her former attendants never examined her. I found, on examination, a tumor hanging from the os and reaching to the outlet of the vagina. Its shape was much like a turnip, the larger diameter being swelled out around the external os. I removed it with the wire ecraseur, and she made a rapid recovery.

I present this specimen on account of its unusual size."

Dr. Curtin read the history of a case of

CESAREAN SECTION.

"M. P., aged 20, was a dwarfed and deformed colored girl. Her tibiæ were curved forward very much, and her femurs were somewhat arched.

Her mother brought her to me to ascertain the nature of an abdominal tumor which had been noticed some months before, The symptoms seemed to indicate pregnancy, but I could not hear the fetal heart, and she denied having been exposed to the cause of pregnancy. She left with directions to return in one month, which she did. Upon the second visit I heard the fetal 'tic-tac,' and upon charging her with being in a family way, she admitted that she had had illicit intercourse. Further inquiry developed the time that the conception took place, being over eight months before. About two weeks after this, I was sent for, her mother thinking that she was in labor, but labor did not take place until five weeks after this time. She had been in labor eighteen hours, when I was called to see her. Upon examining her, I found the pelvis very much contracted in all its diameters, but particularly in the antero-posterior. Finding that the case was a serious one, I called Dr. A. H. Smith in consultation. We decided that the antero-posterior diameter was less than two inches, and the lateral diameter was about three inches. We measured it by the finger and with a pelvimeter. It was then deemed best to remove her to the State Hospital for Women.

Having reached the hospital, I called in my colleagues, Drs. Ingham, H. Williams, and W. H. Baker.

After examining her carefully under ether, the child being still alive, it was decided that gastrotomy offered the best chances for the mother, and that the child also could be saved in this way. The patient had now been in labor about twenty-four hours.

An incision from one inch above the umbilicus to about one inch above the pubis was carried through the abdominal walls. The membranes were now ruptured so as to allow the amniotic fluid to escape. An opening about seven inches long was then made through the uterus.

There was considerable hemorrhage from the lower part of the incision through the uterine walls. The child weighed 7 lbs. 8 oz.; it was removed alive.

The placenta and membranes were removed through the opening. The uterus was closed by five carbolized catgut sutures, which were passed entirely through the walls, and the external wound closed by sutures of the same material, the peritoneal surfaces being carefully approximated. The sutures were tied firmly three times—the first knot having a double turn.

After tying the external sutures, the ends were secured by split shot.

Adhesive plaster was placed over the external incision, raw cotton and a flannel binder were placed over the plaster.

The patient was under ether about one hour and a half. The amount of blood lost was not great.

An hour and a half after the operation, her pulse was 84; temp., 99⅕°; skin cool and moist.

Feb. 27th, 11 A.M.—Six hours after the operation, her skin was inclined to be dry; the pulse and temperature remaining as before noted.

At 3 P.M.—Her temperature had risen to 102°; the pulse remained the same.

Clotted blood was coming from the vagina in about the usual quantity after labor. Barley water has been her only food.

Thursday, Feb. 28th, 7.30 A.M.—She has a little intermittent pain in right iliac fossa; tongue almost clean; commenced giving her beef-tea.

9 P.M.—Her temperature began to rise at 4.30 o'clock; skin not hot nor dry; she suffers no pain; abdomen meteoric; lochia normal. Tongue has a loose white fur; edge inclined to clean; pulse soft, 156; complains of being 'hungry as a bear;' no inclination to delirium, sleeping, or waking.

Friday, March 1st, 5 A.M.—Two days have elapsed since the operation, and only one and one-eighth ($1\frac{1}{8}$) grs. of morphia have been given. Pulse not quite so strong. She now begins with a small quantity of weak milk punch.

11 A.M.—No tympany or irritation of stomach; complains of hunger; tongue as before noted.

Saturday, March 2d, 4 A.M.—Has a slight pain occasionally in right iliac fossa; tongue cleaner; $\frac{1}{4}$ gr. morphia sulph.

7.20 A.M.—No pain since hypodermic injection.

11 A.M.—Tongue quite clean and moist; papilla a little enlarged; she still complains of hunger; a little stinging pain to the left of the symphysis pubis is now complained of.

3 P.M.—Tongue cleaner and a little inclined to be red, except at the middle of the base; papillæ a little enlarged; pulse 128, smaller and quicker. No pain; still feels hungry; lochia normal. She has taken only $1\frac{1}{2}$ grs. of morphia since the operation. She has frequent calls to urinate, and generally passes it without assistance.

10 P.M.—Some little pain complained of in right iliac fossa; limbs extended; no tympany; lochia natural; pulse not quick, but a little more compressible; one-fourth of a grain of morphia relieved the pain; respiration 24.

Sunday, March 3d, 11 P.M.—Tongue about the same as when last noted; lochia perhaps a little too fetid, otherwise normal; no milk has been secreted (belladonna plasters were applied to her breasts immediately after delivery). She is hopeful, and craves solid food and sleeps well.

Monday, March 4th, 2 A.M.—Feels comfortable, and sleeps quite naturally. Passes water rather frequently.

7 A.M.—The odor from lochia hardly perceptible. Complains of only one thing, and that is hunger.

11 A.M.—Plasters over the abdominal incision removed. The wound was found to be closed; no pus found; abdomen not in the least tympanitic; skin cool and moist; there is less papillary enlargement of the tongue.

3 P.M.—She looks bright, and is still hopeful. Solid food is loudly called for.

8 P.M.—Water retained longer. The lochial discharge is black and fetid.

Tuesday, March 5th. 8 A.M.—At four o'clock this morning, she had a little pain in left iliac fossa: one-sixth of a grain of morphia put her to sleep for two hours; her condition in other respects about the same.

I left her at half-past nine o'clock in good spirits, returning again in a little over two hours. I was met on the stairs by the nurse who informed me that a great change had come over the patient. I found her in a collapsed state, pulseless and unconscious, which condition continued until she died. From the time the change in her condition was noticed by the nurse to the time of her death, was only about twenty minutes.

Post-mortem, 12 *hours after death*.—Present Drs. Baker and Willard. The incision through the abdominal walls was removed. In cutting around it, the wound gaped open, all the gut sutures except two gave way, and these allowed the cut to gap open a quarter of an inch.

The walls of the abdomen were glued to the uterine incision above the pubis. A small clot, about the size and thickness of a half-dollar, was found at the point of agglutination. The peritoneum was a little blackened along the edge at the abdominal incisions, but no inflammatory changes were found.

In the pelvis, the intestines were slightly adherent with a slight pasty exudation; the peritoneum elsewhere was normal. The colon was slightly distended by gas; no fluid was found in the abdominal cavity.

The uterus was found to be well contracted. The incision through its walls had contracted to about two and one-half inches. It was gaping, although the sutures still held. The uterus was free from adhesion, except as before stated. In cutting out the uterus, the sutures gave way without much force being applied to them. The edges of the incisions were black and rough. There had not been any attempt at union. The inside of the uterus was covered with a brownish-black semi-solid grumous substance, which was quite fetid.

The pelvis, before the removal of the soft parts, measured less than two inches in its antero-posterior diameter.

The lungs were healthy.

In the heart, a white firm clot was found, extending from the right ventricle into the pulmonary artery. This clot was so firm as, when lifted up, to support the weight of the heart suspended therefrom.

The post-mortem teaches us the lesson that carbolized gut sutures are of little use in wounds of the uterus after the Cesarian operation. The wound is allowed to gap open from two causes: 1st, from softening of the stiff gut sutures, resulting in condensation of the knot; 2d, from the rapid shrinkage of the uterine walls which follow labor.

Appended will be found a tabulated record of the temperature and pulse."

	7½ A.M.	11 A.M.	3 P.M.	11 P.M.
Wednesday, February 27th.	99⅕ T. 84 P.	98⅗ T. 88 P.	102 T. 88 P.	101⅘ T. 84 P.
Thursday, February 28th.	100⅗ T. 116 P.	101⅖ T. 128 P.	102⅘ T. 124 P.	106⅒ T. 126 P.
Friday, March 1st.	104 T. 132 P.	103⅘ T. 140 P.	104 T. 120 P. 24 R.	102⅗ T. 140 P.
Saturday, March 2d.	101⅘ T. 132 P. 18 R.	101⅘ T. 128 P.	103⅗ T. 128 P.	104⅘ T. 140 P. 24 R.
Sunday, March 3d.	104⅖ T. 136 P. 24 R.	104⅗ T. 124 P. 24 R.	104⅕ T. 136 P.	104⅗ T. 140 P. 20 R.
Monday, March 4th.	104⅘ T. 138 P. 20 R.	104⅖ T. 140 P.	103⅖ T. 128 P.	103⅖ T. 132 P. 22 R.
Tuesday, March 5th.	105⅖ T. 142 P.	104⅕ T., in a collapsed state. Died in 20 minutes.		

Stated Meeting, April 4, 1878.

The President, JOHN H. PACKARD, M.D., *in the Chair.*

ENCAPSULATED ROUND FIBROID TUMOR OF THE UTERUS.

DR. Albert H. Smith exhibited for Dr. ANNA A. BROOMALL a specimen of uterine tumor with the following history:

"Elizabeth B., aged 46; German; married. She had been a strong woman, and had worked hard. She had borne two children, both of whom died in early infancy. She had had no abortions.

Four years ago she noticed a lump in her right side, and low down in the abdomen. She continued at her occupation, that of washing, until Christmas, 1877, when she was obliged to give up her work on account of frequent and often excessive uterine hemorrhages.

When first seen by Dr. Broomall, on March 29th, 1878, as an out-patient of the Woman's Hospital, she was extremely anemic; tongue pale and lips bloodless; edema of lower extremities and hands; respiration 40 per minute, and labored; marked pulsation in the neck. Examination of the chest rerevealed increased resonance over both lungs anteriorly, and mucous râles at the posterior base of left lung.

Cardiac dullness was increased. The apex beat extended over an area of two inches square. A loud blowing murmur was audible over the entire cardiac region. The pulse was 100 in the minute and was weak.

The abdomen was increased in size, was tympanitic in the centre and dull at the sides. The dullness varied with change of the patient's position, but the fluctuation was not marked. Hepatic dullness extended above to the fifth rib and below to an inch beneath the costal border. There was no irregularity of the border of the liver. A firm mass on the right side of the abdomen was found by vaginal examination to be continuous with the uterus, and was movable. There was nothing abnormal about the cervix uteri.

On account of the very weak condition of the patient, the above meagre notes were all that could be obtained. She died April 1st, 1878.

Autopsy, 20 hours after death. Rigor mortis marked.

Thorax.—Pericardial fluid cloudy and contained a few flakes of lymph. The sac was slightly adherent to the base of the heart. The pericardium was roughened. The right side of the heart was relaxed, the left side contracted. There were small dark clots in the right side and in the left ventricle. The left auriculo-ventricular opening was dilated, and allowed the introduction of three fingers. No change in the semi-lunar valves. There was slight atheroma at the commencement of the aorta. The edge of the mitral valve was thickened, and presented traces of old inflammation. There was catarrhal pneumonia, and the upper lobes of both lungs were emphysematous. There was marked edema, a clear liquid flowing freely from a cut section of the lung.

Abdomen.—The omentum was adherent to the viscera in the lower part of the abdomen. The abdominal cavity contained about one-half pint of clear serum. The liver extended an inch below the anterior and three inches below the lateral costal border. Its cut section exuded a watery blood. The spleen

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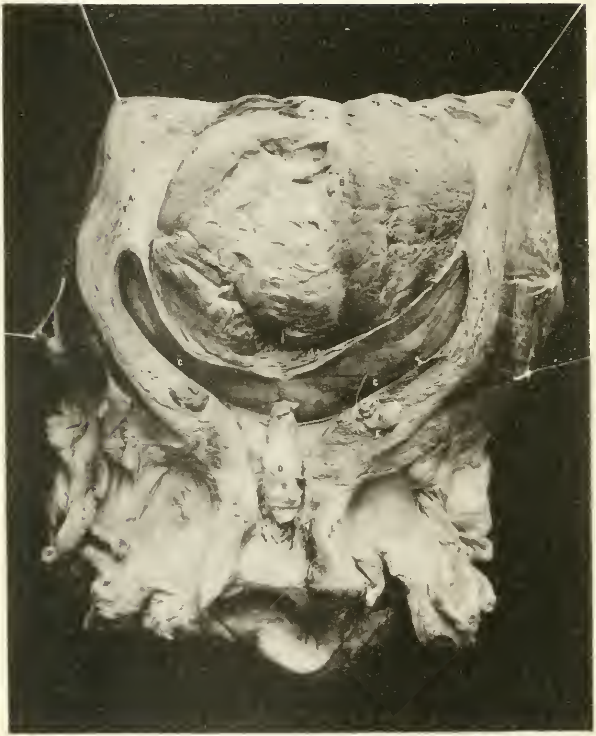

HELIOGRAPH

J. CARBUTT, PHILA

DR. BROOMALL'S SPECIMEN OF ENCAPSULATED ROUND FIBROID.

HALF NATURAL SIZE

A. A. UTERINE WALL DISTENDED AT ANGLES OF INCISION
B. B. ROUND FIBROID
C. C. CAPSULE
D. MUCOUS POLYPUS ATTACHED TO CAPSULE
E. E. INTRAMURAL FIBROID DIVIDED BY INCISION

was six inches in length, chocolate-colored, and was somewhat softened. The kidneys were pale, as were all the viscera, and were slightly increased in size. The cortex was edematous. Several small cysts were on the surface, and the capsules were partially adherent.

The uterus extended midway between the umbilicus and symphysis pubis, and was inclined to the right side. It was, however, movable. It measured 17 cm. in length and 9½ cm. in width. There were some adhesions on the posterior surface. The enlargement was regular, with the exception of a nodule, the size of a walnut, on the posterior surface of the cervix. On section (see Plate), the uterine cavity was found occupied by a tumor, which was attached to the posterior wall and the fundus by a broad base. It had begun to soften, and could easily be peeled from its capsule. A small mucous polypus hung from its lower border into the cervical canal. There were several small tumors, not exceeding the size of marbles, at different points in the uterine wall."

Dr. J. L. Ludlow had been called in consultation with Dr. Harlow to see a patient suffering from a uterine tumor. In this case, the hemorrhage had been very severe, and nausea formed a troublesome complication. Her life was hanging by a thread; she said she wished to die, and refused to have ergot used hypodermically. Under the pretense of using opiates, ergotine was employed in suppositories. One night, some time afterward, Dr. Harlow was sent for with the message that the woman was dying, and her bowels were coming away. He found, on his arrival, that the tumor was being expelled by uterine contraction. Dr. Woods, in a similar case, had used hypodermic injections of ergotine into the tumor itself, with the result of its early expulsion by forcible uterine contractions.

Dr. Wm. Goodell had been called to see a patient suffering from an interstitial fibroid. She had severe pain, and the hemorrhage had been profuse. She was confined to her bed. ergot was tried, but increased the pain, and opiates could not be borne.

Dr. Trenholme, of Montreal, had, in a similar case, removed the ovaries. This expedient was tried in the present case by Dr. Goodell. Both ovaries were removed by vaginal section. The result was marvellous. The tumor rapidly diminished in size. Peculiar nervous symptoms, but nothing more, developed themselves after the removal of the ovaries. In two other successful cases of removal of ovaries per vaginam, very peculiar and marked hysterical symptoms also showed themselves during the first week after the operation.

Dr. Robert P. Harris read the following:

REMARKS ON THE CESAREAN OPERATON.

"The operation by Dr. Curtin, reported at the last meeting, is the fourth that has been performed in this city, and the fifteenth in the United States, in which sutures have been introduced into the uterus. It is also the first, as far as I can ascertain, in which sutures of animal tissue, either plain or carbolized, have been thus employed in this country. Carbolized catgut was first brought into notice as an antiseptic arterial ligature, and it is claimed by the Germans that Veit, of Bonn, was the first to apply it to closing the uterine wound in gastro-hysterotomy. But who did it first is not very material now, since even its earliest and most active advocates have been forced, by signal failures in England and on the Continent, to abandon it as unreliable, and have generally recommended the silver wire instead.

We must distinguish between the animal ligature as applied to arteries, or the pedicles of internal tumors, for the arrest of hemorrhage; and the sutures, for holding in apposition the lips of an internal wound. Animal ligatures originated with Dr. Physick, and were practically tested on animals and men by Dr. Dorsey, his nephew, and Dr. Joseph Hartshorne; the materials used being strips of buckskin, kid-parchment, and catgut. After Dr. Physick's report appeared in the Eclectic Repertory of 1816, experiments were tried in various parts of the South and West, and particularly with shreds of deer-sinew, as suggested by him. As an arterial ligature, this material has been quite extensively employed, and by some much commended, but all animal tissues have repeatedly failed when used to secure wounds in the interior of the body, even when treble-knotted.

Who first employed the animal ligature as an internal suture I know not, but do know that it was condemned in strong terms in this country, as long back as 1836, by Dr. Robert Estep, of Stark County, Ohio, in a report made upon two successful cases of gastro-hysterotomy.

Having already written a long article upon this subject, which will be found in the *Am. Jour. of Med. Sc.* for April, 1878, I shall confine my remarks to matters of interest in connection with the use of the uterine suture, and present a résumé of the thirteen cases prior to Dr. Curtin's, in which the uterus was sewed up, together with some curious historical facts.

One of our oldest physicians remarked to me, a few days ago, that the Cesarean operation was obsolete now, being rendered such by the introduction of artificially-induced premature labor. I soon changed his opinion by a recital of facts, and by showing him that the operation of gastro-hysterotomy was almost exclusively confined to a class that rarely consulted an obstetrician until entirely too late for this improved method of delivery; and that in many cases the deformity was such that the operation was impracticable, except at a very early period, when the fetus would not be viable.

During the past eleven years, 29 Cesarean operations have been performed in the United States, the subjects being 19 whites and 10 blacks.

In the eleven years immediately preceding 1867, there were 25 operations, on 11 whites and 14 blacks.

From 1845 to 1855, both included, there were 22 operations, 8 whites and 14 blacks.

This shows certainly no abatement, except in the proportion of blacks over whites, in which the figures have been reversed in the last period of eleven years, as compared with the first. Thus it will be seen that the operation now averages 2½ cases a year, showing a slow but steady increase in numbers during the past thirty-three years.

A very decided change has been made in the frequency of the use of the uterine suture; as fourteen out of the fifteen cases have occurred within the last eleven years. The first instance in the United States dates back to 1828, when a country charlatan in Virginia operated by the oblique incision, practised a hundred years ago, and sewed up the uterus with silk, using the same number of sutures (3) as Lebas of France employed in 1769, but not with the same result, as the French woman recovered, and the empiric's case died. We must, however, give the latter the credit of nearly saving his patient, for after doing well for ten days, she brought her life to an end in two more, by imprudently dining upon animal food and cider. This example being neither authoritative nor successful, was not imitated by any one, and an interval of thirty-nine years passed by before the second instance of the uterine suture was reported.

In 1867, there were four Cesarean operations, with a saving of three women and two children; two of the women saved, and who are still living, having been operated upon by the uterine suture, one in November, at New Haven, by Dr. T. Beers Townsend, now of New York, and the other in December, at New Orleans, by Dr. D'Aquin and Prof. D. Warren Brickell. In the former, three fine hempen sutures were used, and five uterine vessels were also secured by ligature. In the latter, as the uterus did not contract, labor having lasted ten days, six silver-wire sutures were inserted.

The next four operations were performed without sewing up the uterus, and resulted in saving one woman and three children, one of the women lost perishing by intestinal obstruction, a loop of bowel probably being constricted in the closing uterine wound; a suture would have prevented this.

No. 4 was performed by the late Prof. Abram Sager, of Ann Arbor, Michigan, in November, 1869. The woman was a delicate, rickety dwarf, who had always gone upon crutches, and measured 3 feet 6½ inches in height. Her pelvis was thin, light, and child-like in size, but frightfully distorted, the conjugate diameter measuring but ⅝ of an inch. Dr. Sager finding a uterine fibroid in the line of incision, introduced four silver sutures to close the wound and arrest the hemorrhage. Although the operation was performed early, the patient, being a delicate subject, died of shock, commencing peritonitis, and escape of lochia into the abdominal cavity. The uterine wound was found gaping at the seat of the fibroid. The woman lived twenty hours, and her child six weeks. Prof. Sager exhibited her pelvis in this hall in the spring of 1872.

With No. 5 commences a succession of seven operations, in all of which the uterus was sutured, but with only a saving of two women and four children. In No. 5, only one suture was used, and it was removed in 36 hours. The case occurred at Kingsbridge, N. Y., in 1870, under the care of Drs. Paluel De Marmon and Charles F. Rodenstein. So much time was lost in procuring assistance (23 hours) that the woman was operated upon in an exhausted state, and died in 43½ hours, of metro-peritonitis. The child was saved.

In No. 6, there was almost no hope of the woman, who had albuminuria and convulsions at the time of the operation. This was performed by Dr. T. A. Foster, of Portland, Maine, in 1870. The woman died of Bright's disease in 60 hours, and the child followed her in a few days, presumed from uremic poisoning.

No. 7 was performed by the late Dr. John V. P. Quackenbush, of Albany, N. Y., in November, 1871, upon a dwarf, after a long delay at the hands of a midwife, and an additional waste of time and the woman's strength in an attempt at delivery by craniotomy. The woman died in 72 hours. She had been three days in labor. There were two silver-wire uterine sutures employed.

No. 8 was a case of sub-peritoneal fibroid tumor of the uterus, and was operated upon by Dr. E. L. Griffin, of Fond du Lac, Wisconsin, in May, 1872. The woman had been ten months pregnant, and the child long dead. She died of hemorrhage and exhaustion shortly after the operation. One silk suture was inserted in the uterine wound.

No. 9 was also a case of fibroid tumor of the uterus, occluding the os, and was operated upon by Dr. T. Gaillard Thomas, of New York, in March, 1874. The funis was prolapsed and child dead. Uterine wound secured with silver-wire sutures, number not mentioned. Woman attacked with violent peritonitis in twenty-four hours, and died in two days more.

In No. 10, the same form and number were used, but with a far different result. The operation took place at Portsmouth, Ohio, in June, 1875, under the care of Drs. A. B. Jones and Kline, and was performed on a dwarf, 3 feet 11½ inches high. Both woman and child were saved.

No. 11 resulted in the same way, and was operated upon, in the same year and State, by Dr. Lungren, of Toledo. Four silver-wire sutures were used. The operation was performed as early in the labor as practicable.

No. 12 was a very remarkable case, as the woman was only 3 feet 4 inches high, and 65 pounds in weight, while her child was 20 inches long, or half her height. The operator was Dr. O. P. Barber, of Saginaw City, Michigan, and section was made in January, 1876. Three silver-wire uterine sutures were used. The woman died in five days of exhaustion and peritonitis, and the uterine wound was found gaping. The child lived and did well.

No. 13. This case was operated upon in June of last year, at Detroit, Michigan, by Dr. Edward W. Jenks, and although by no means a promising one, as the woman had been in labor for seven days, she made a good recovery. Four silver-wire uterine sutures were inserted. The child died during the protracted labor.

No. 14 is the third case furnished by Ohio in the last three years, the whole of the States in that time having reported but eight operations. The woman was in bad health, with coxalgia, cough, and an abscess in the groin. She weighed but 78 pounds, and lived in one of the worst localities in Cincinnati; was affected with diarrhea and badly nursed; and still, with the care used by Dr. George E. Walton, the operator, lived fifteen days after the operation, and then died of exhaustion. Such was her condition at the time of the section that she very nearly died on the table. The child was lost, probably for want of care. Had this woman been in health, she would undoubtedly have recovered. Unfortunately, no autopsy was permitted. One silver-wire uterine suture was used.

This brings the record down to the case of Dr. Curtin, which, we believe, was increased in gravity by the time allowed to pass between the commencement of labor and performance of the operation. Although cases do recover after several days of labor, and even when operated upon under conditions of extreme exhaustion, the experience of this country shows that a few hours of suffering lost to the patient add materially to the risk of the operation, especially in dwarfed and rachitic subjects. Had Dr. Curtin been summoned at the commencement of labor, instead of after it had existed eighteen hours, the result might possibly have been different. In neither of Dr. Gibson's operations had the labor lasted more than twelve hours. In the first case, the pains began a little before daylight, and the operation took place at 5½ P.M. of the same day, a delay of two hours having been made by the difficulty experienced in gaining the consent of the patient. In this case, the labor pains were slight, and shortly after the operation was completed, her pulse counted but 80. The second operation was performed after ten hours of labor. Little did the eight physicians present at the first operation suppose that this woman was to outlive them all for many years, as she has done. I have seen her within a few days, and she looks as if she might live some years yet. She is in her 70th year, erect, slightly built, quite under size (4 feet 8), and young in her appearance for her years. She informed me that she had never been as strong since the operations as she was before, and that her abdomen had for a long time felt unusually sensitive, and still was a little more tender to the touch than was natural. The cicatrix is very complete, and there has never been any hernial protrusion. I account for the hyperesthesia from the fact that the uterus, omentum, and abdominal parietes became united by the local peritonitis that followed the first operation. In the second operation, the abdominal cavity was but slightly opened, the incision being made in the line of the old cicatrix and adhesions—a procedure which diminished the danger, but which the patient informed me was far more painful than the first operation.

The two children of Mrs. R. grew up, married, and have children of their own—six in all. The daughter has never experienced any difficulty in parturition.

The autopsy in Dr. Curtin's case revealed a cardiac condition which probably would be frequently found where the Cesarean operation has terminated fatally, if the heart was examined, which it seldom has been; and particularly where the patient has died in an exhausted condition several days after the operation. The fact that there was no attempt at union in the uterine wound in a week, shows that the system

ıst have been in an unhealthy state from the first, as this
ision has been known to heal in the space of thirty hours
er the operation, and the abdomen completely in eleven
ys.

I will state here to the Society that, up to this date, I have
llected the records of eighty Cesarean operations in the
ıited States, with the saving of life in $47\frac{1}{2}$ per cent of the
omen. One-third of these records are new to the profession,
d were searched for and obtained by a long-continued and
rsevering correspondence. I have recently obtained reports
operations performed in 1831 and 1832, and hope to secure
record of one that dates back to 1825, all successful, but
ver published.

The importance of thoroughness in search, as a security
ainst imperfection and partiality in preparing statistical
cords, is readily shown by an examination of the results of
published, as compared with the unpublished operations.
ıe 54 that I have found in books, journals, and transactions,
sulted in the saving of 30 women and 28 children; and the
that have been collected through correspondence, saved but
women and 9 children. Had the record been stopped when
former list was complete, I should have shown a recovery
$55\frac{5}{9}$ per cent of the mothers; whereas the increase of cases
s materially added to the mortality of the women, reducing
e average of recoveries by about eight per cent.

I have never experienced any difficulty in obtaining the
cords of unpublished fatal cases, except in one instance,
ıere the operator resided in a remote and very retired place,
d had long ceased to practise his profession; but I cannot
y this in regard to the successful ones, which in some
stances have required several years of occasional writing,
th patient waiting, to secure. Some have never been pub-
hed because there was no journal near at hand to send to;
me, because it was a trouble to prepare the manuscript; and
hers for the reason that the operators were indifferent about
e whole matter; hence the difficulty of obtaining a written
cord, even when urged by intimate personal friends. I have
et the difficulty with many such, by sending them a form of
port to be filled up and returned to me.

I believe the Cesarean statistics of the United States will at
eir completion more truly represent the results of this oper-
ion than those collected in any other country, where the
searches have extended very little beyond the published cases.

has been said of me by one writer that I leaned too much
the favorable side: why, I know not, unless the results
peared to him so much more favorable than his preconceived

estimate, that he could not see how they could have obtained under an impartial and thorough examination of the entire field. The Cesarean operation in this country may be said to have had its commencement in the State of Louisiana, within the present century, at the hands of French surgeons educated in the schools of Paris and Montpellier, as they were certainly the earliest operators, and as far as I can learn, very successful. One is said to have operated on three women, on one of them twice, making four operations, saving all of the children, and losing but one of the women. The surgeon in question was born about the year 1764, but is not believed to have operated until after middle life. As he lived to be about 78, and his successor in practice is still living, I have obtained a reliable record of one of his operations, and am in active search of others. His last operation was performed in 1831, when he was about 67 years old. I refer to Dr. Prevost, of Donaldsonville, erroneously stated in this city, by one of his neighbors, in 1835, to have operated six or seven times on the same woman."

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Reported by J. W. Underhill, M.D., Secretary.

Stated Meeting, December 13, 1877.

Dr. A. J. Miles, *Vice-President, in the Chair.*

Dr. J. L. Cleveland reported a case of

IMPREGNATION FIVE MONTHS AFTER THE CESSATION OF MENSTRUATION—THE UTERINE SOUND USED WITHOUT HARM TO THE FETUS—A LIVING CHILD EXTRACTED BY CESAREAN SECTION ONE HOUR AFTER DEATH OF THE MOTHER.

"The following case contains so many points of interest that I think it is worthy of record. It is certainly rare to find such a chain of circumstances happening to one patient. The patient, Mrs. H., æt. 47, was the mother of six children, the youngest of whom is five years old. She first consulted me the 25th of last May, in regard to a tumor in the lower part of her abdomen, which she thought she had observed for some time—how long she could not tell—but now she was uneasy in regard to it, as she thought it was increasing in size, although it caused her no pain. Being a healthy woman and not old, pregnancy was immediately suspected. She was confident that such was not the case, arguing that the symptoms were entirely different from what they had been in her former pregnancies. She thought she had passed that time of life, as she had not seen her changes for six months. This was certainly a presumption that she might be correct, since the tumor in question was scarcely larger than a man's fist. If this was pregnancy, and if it had happened before or shortly after the last menstruation, she would now have been six or seven months advanced, which was evidently not the case. The bimanual method enabled me to circumscribe the tumor which appeared to be irregular in outline, suggesting to me the probability of its being a fibroid, but there had been no hemorrhage, and the cervix was not as hard as is usually found in fibroids. Notwithstanding there were some points that weakened my deduction, still I concluded that the tumor was a uterine fibroid. Having this idea, I ventured to introduce the sound. This was done; it turned to one side when introduced; the uterus was pressed up towards the anterior abdominal wall, so as to better feel the outline which still appeared irregular; the depth was about six inches. No hemorrhage or any other discharge followed the use of the sound, nor did it produce any discomfort. This only confirmed me in my previous opinion that the enlargement was due to a myoma. Thus far it was of no particular interest except from a diagnostic point of view; the size of the growth was insignificant, and it was not at all probable, at her time of life, that it would increase sufficiently in size to be dangerous, probably not even troublesome. It would most likely remain stationary or diminish in size. Thus I reasoned upon the subject. But the idea of having "a tumor" was such a terror to my patient's mind that she insisted on my doing something, whereupon she was placed upon Squibb's fl. ext. ergot, ♏ xv., three times a day. This she took without intermission for eight weeks, without any perceptibly bad effect. For the time I dismissed the case entirely from my mind. The patient, not being entirely satisfied, consulted another physician without informing me. His diagnosis corresponded with mine. I may here add that he has a much richer and more extensive experience than mine. But it is probable that his examination was hasty and his opinion preformed from the fact, that during the examination he learned that the patient had been under my care. This statement I owe to my brother practitioner, as I have no desire to involve any one else in my mistake.

August 20th, the patient came to my office very much excited, saying that she was now certain the tumor was increasing in size. Her appearance was such as to justify her opinion, for her abdomen was evidently enlarged. The tumor had risen above the pubis. A careful stethoscopic examination detected the fetal heart. This development very summarily disposed of my fibroid tumor. However, as a compensation for the chagrin induced by my mistake, I had several interesting points to reflect upon. First, here was a case that had become pregnant four or five months after what was apparently the cessation of menstruation, showing what is already known, viz., that ovulation may take place independent of menstruation, and further that it is possible for it to continue for some months after menstruation has ceased; that the sound may be used even with considerable violence, as it was in this case, without bringing on an abortion; and that ergot may be given for a length of time, eight weeks in this case, without inducing miscarriage.

I heard nothing more of this patient until Nov. 27th, when I was summoned in haste to attend her. When I entered the room, I found her sitting up, looking around in a dazed manner; she was just recovering consciousness after an attack of what I suppose to have been convulsions; her tongue was bleeding, and the appearance and the description of witnesses pointed to this. Her pulse was 75; respirations normal; she had no pain; only complained of feeling tired, which I attributed to the convulsions. There was nothing to indicate that labor had begun, nor was there anything just then that seemed to point to her impending fate. I learned from the family that she had been having attacks similar to this, though not so severe, for about two weeks. Sometimes they would amount only to a partial loss of consciousness that would pass away in a short time, and sometimes they would be more severe. These had occurred three or four times during the week. Her husband informed her that she had had convulsions in one of her previous pregnancies, ten years ago. When I left the patient, I promised to come back again in two hours. I returned at the time specified and found that she had just died. Auscultation over the uterus showed that the fetal heart was yet vigorous. After assuring myself that the patient was dead, I presented to the husband the propriety and necessity of an operation to save the child. Removing the child by turning or the forceps could not be thought of; the delay necessary for such a procedure would insure the death of the child. The Cesarean section, of course, was the only measure that could be entertained with any hope of success. Immediate action was imperative But the husband refused to allow the operation to be performed. I discovered now to my chagrin that I had not my pocket-case with me, so I left the husband to reflect upon the situation while I hastened to my office, at least a quarter of a mile distant, after my pocket-case; this consumed about fifteen minutes. I attempted to operate immediately upon my return, but the husband stopped me, and I was compelled to desist and argue the question with him and persuade him; he finally consented. Still the fetal heart could be heard faintly. A delay of at least three-quarters of an hour was covered by these preliminaries, and I believe a full hour had elapsed before the child was removed. When first extracted, the child was asphyxiated, but the pulsation of the heart was perceptible to the hand. In a very short time, however, it began to gasp, and in the course of an hour it appeared to be fully restored. The child, a small but well-formed female, was evidently near full term. The mother had been expecting to be confined at any time. The child is alive and doing very well, for a motherless child, up to date.

No post-mortem examination was permitted, so the cause of death must remain a conjecture. The symptoms pointed to the probability that the convulsions were of uremic origin, though it could not be ascertained whether the urine contained any albumen. There was some swelling of the ankles, which pitted on pressure. All accounts given by the husband and friends were very meagre and unsatisfactory.

The length of time that elapsed between the death of the mother and the removal of the child is much longer than is generally supposed possible for the child to live in utero. Schroeder, in his Manual of Midwifery, says that 'children extracted ten minutes after the death of the mother are only exceptionally kept alive. It is not impossible to save a child a quarter of an hour, or even somewhat longer after the death of the mother.' He appears to think that reported cases, where a living child has been extracted hours after the death of the mother, if worthy of credit at all, are cases of apparent death. The above is the general testimony of authors. 'There are a few authenticated cases, however, in which there can be no reasonable doubt that the operation was performed successfully several hours after the mother was actually dead' (Playfair). In my case, the exact time that elapsed from the death of the mother till the removal of the child was not accurately noted on account of the confusion that existed, and the opposition that was met with in obtaining permission to operate; but

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[1] The child is still alive and in good health at the present writing, June 7th, 1878.—J. L. CLEVELAND.

I feel confident that at least one hour transpired. The hypothesis that the woman was in a swoon, thus prolonging the life of the child, will not hold good in this case, for I know the mother was dead. It appears to me, when viability is limited to fifteen minutes or half an hour after maternal death, the well-known capacity of the fetus in resisting asphyxia is not taken fully into account, which, of course, will be increased by the residual oxygen that is in the placenta at the time of death."

Dr. Palmer said: "From the standpoint of the history of the case as read, I cannot see how the mistake was made in supposing the presence of a uterine fibroid instead of pregnancy; still, there are circumstances of difficulty attending and surrounding many obscure cases, calculated to mislead the best of us.

The history as well as the symptomatology of uterine fibroids is so different from pregnancy that, as a rule, there is no difficulty in differentiation.

That form of fibroid located in the uterine cavity may be said to invariably increase the menstrual flow, prolong it, and produce distinct hemorrhage during the interval. Interstitial or intramural growths were almost equally certain to do so. Even when the patient has passed the menopause, this is usual. It is only in the extra-uterine growth that patients escape from hemorrhage. Now, it was supposed that Dr. Cleveland's case had the interstitial variety; moreover, she had not advanced beyond the climacteric.

The amenorrhea of pregnancy is ordinarily abrupt in its beginning. The menorrhagia of fibroids is slowly progressive.

Again, the shape of the uterus, its outline, is quite different in intramural fibroids from the symmetrical development of pregnancy."

Dr. Underhill.—"The most interesting point to me, in Dr. Cleveland's case, relates to the length of time after the mother's death at which the child was extracted alive. Having occasion long ago to look up this subject pretty carefully, I then became satisfied, from reports of cases of post-mortem Cesarian section, that one hour is the maximum length of time which an intra-uterine child can survive the death of the woman. From my personal acquaintance with Dr. Cleveland I know, and every member of this society knows, that he is not prone to exaggerate. I therefore accept his statement as true, although it shakes my conviction as to the limit of fetal life in the womb of the dead woman. There seems to be no reason why the operation would not have been successful, in this case, had it been delayed five, ten, or even fifteen minutes longer. The asphyxia appears not to have been so extreme as to prevent this assumption. Indeed, it not infrequently occurs, as we all know, that even in ordinary labors asphyxia of the child may be greater than reported in this instance, and yet resuscitation be effected.

Probably the child will survive the mother's decease longer, cæteris paribus, in proportion to the suddenness of the woman's death. If she lay sick for a considerable period prior to death, the amount of oxygen in the blood at the moment of dissolution is presumably less than it would be at the instant of sudden death in a woman previously healthy. And it must be remembered that, in this case of Dr. Cleveland, the mother's death occurred quite suddenly—a circumstance which probably accounts for the success of his operation.

Concerning Cesarian section in general, it is well known that originally it was performed only on the dead woman. Not until about the middle of the 15th century did the operation before death come into vogue. Some have supposed that the term "Cesarian" is derived from "*cæso matris utero*," while others have claimed that its origin is due to the fact related by Suidas, that Julius Cesar was ripped from the womb of his dead mother. History contains many examples of valuable lives having been saved in this way. Additional force was lent to this ancient custom by Numa Pompilius, second mythical king of Rome, who decreed that the burial of no pregnant woman should be allowed until her abdomen had been opened and the fetus extracted. This prohibition was wise, and more in accordance with physiological knowledge than might have been expected from those in authority at that age.

Objection to the operation may be made by the husband or other representative of the deceased, and the accoucheur be debarred the privilege of operating, although he may know that the child is still alive in the uterus. Dr. Cleveland tells us that objection was made by the husband of his patient, and that it was with difficulty, and only after the loss of much valuable time, that he could persuade him to allow the operation. Upon this point Dr. Taylor says, in his work on medical jurisprudence, that there are few medical men who would, under such circumstances, attempt to operate by force. He recommends the physician to convince, if possible, the representative of the deceased of the necessity for the operation; but failing to accomplish this, he thinks it would hardly be proper to persevere and operate against his will. He adds, in substance, that there is no *legal* offence in refusing to permit the operation, and the party so refusing cannot be lawfully punished, although through his obstinacy it may be certain that the child has been allowed to perish in utero. From a medical standpoint, I may add, such refusal seems a crime scarcely less than that of infanticide, and statutory law should be effected prescribing just penalties for the offence."

Dr. Palmer read the notes of a case of

ANENCEPHALOUS FETUS WITH EVENTRATION.

"A primipara, æt. about 20, of good health, in labor (counting from the close of the last menstrual period) at the end of the seventh month of gestation. Dr. Kramer first called to the case, detecting the presentation of a soft substance through a small dilating os, was puzzled as to its nature, and requested me to see her with him. The general condition of the patient was good, the os about 1½ inches in diameter. Cervix thick, rigid, contractions active. Membranes ruptured. The presenting soft mass seemingly was more detached on one side. Hemorrhage not profuse. I expressed the opinion that it was a placenta previa, with central implantation, partly detached; and that the moderate hemorrhage was owing to the fact that the presenting part of the fetus above, through strong uterine contractions, had firmly pressed against this presenting mass, and practically was acting as a ligature to the bleeding vessels. We agreed to give morphia hypodermically, to quiet restlessness, diminish pain, and aid the dilatation of the cervix; and with the understanding that the tampon was to be used by Dr. Kramer if there was much hemorrhage, I left for one hour. At the expiration of that time, returning, we found that the fetal heart-sound was very distinct to the right and high up, and on examination that the supposed placenta had descended to the inferior strait, through a freely dilated cervix, and that it could be easily traced to, and adherent to the fetus near the breech. Then its true nature was suspected. With hand within the pelvis, and fingers hooked around the thigh, downward traction rapidly completed delivery of malformation of the anencephalus genus, with eventration. There was no effort at respiration, and the fetal heart immediately ceased. An immense placenta with short cord immediately followed. The quantity of liquor amnii first discharged was very large.

Here then was a case which, as to diagnosis of real presentation, was calculated at first to deceive the most skilful. To the touch, this mass of protruding abdominal viscera, preceded by the intestines of the fetus, gave a sensation very much like to the placenta. Its position was quite like that of the central implantation of that organ. The undilated os prevented a satisfactory tracing of its upper attachment. Labor was premature. The fact that there had been but moderate hemorrhage, under this presumption, seemed rather strange, it is true, but I was disposed to offer what seemed to be a satisfactory explanation of this, viz., early rupture of the membranes, active contractions, quick and thorough descent of the presenting part of the fetus against the placenta.

Few things, we imagine, are more liable to mislead in the diagnosis of presentation than malformations of the fetus.

Fortunately, the error in diagnosis, first made, in no way unfavorably influenced the management or the result. The treatment would probably not have been different, even if the real nature of the case had been suspected.

A careful search through the records of the London Obst. Soc. will quickly convince one that this form of malformation is among the most common. St. Hilaire states that eventration is one of the most frequent complications met with among the genus of *anencephalicus.*

In most cases of delivery of this form of monstrosity, more or less hemorrhage has occurred.

The placenta has presented in quite a proportion of the cases.

The presentation of the protruding fetal viscera I find is reported in three instances, when the same mistake in taking it for the placenta was made."

Dr. Palmer also reported

TWO CASES OF PELVIC CANCER OF ACKNOWLEDGED RARE VARIETY,

which had recently come under his observation.

"The first was a cancer of encephaloid variety, located in the body of the uterus, seen in consultation with Dr. Kearns, of Covington, Ky. Patient was a single lady, from 35–40 years of age, who had had profuse uterine hemorrhage and leucorrhea for several years, for which she had been treated by several physicians. The last diagnosis was uterine polypus.

Digital and sound exploration revealed the uterus as large as fourth month of pregnancy, and a foreign body in the cavity, which, on examination, proved to be malignant.

The patient at this time (Nov. 1st) was greatly reduced and profoundly anemic from hemorrhages, anasarcous, at times delirious, tongue brown and dry. Temperature was very high. She had recently been having frequent chills, complained severely of pain in several joints. Hemorrhage at this time was slight, but the vaginal discharge was profuse and horridly offensive.

With no hope of doing more than palliate her condition, I removed with the curette, by thoroughly scraping the uterine walls, a large quantity of the malignant formation, and then washed out the cavity with carbolized, iodinized water, to check further flow, and relieve the fetor. This much it accomplished, but she sank in a few days from the septicemic poisoning."

"The second case was one of primary cancer of the vagina, in a patient aged 57—ten years past the menopause. Here the posterior vaginal wall had been attacked with an epithelioma for an uncertain duration, probably more than six months, judging from the history.

The growth protruded over some three-fifths of the upper wall, and there was infiltration of the mass to within the recto-vaginal septum, down to the rectal mucous membrane. The posterior cervical lip was slightly involved. There was every reason to believe that the cervical implication was secondary, from the fact of the greater and deeper vaginal infiltration, as well as the extent of the disease downward. With the assistance of Dr. Bartholow, who referred the case to me, and Dr. Zinke (Dec. 3d), I removed with the scissors and scoop as much of the growth upon and within the septum as was deemed safe, without opening into the rectum, and, at the suggestion of Dr. Bartholow, applied a strong solution of chromic acid, instead of the bromine solution which it was my first intention to use, to the base, protecting the surrounding vaginal walls with a packing of cotton.

In ten days following, after the separation of the eschar, a vaginal examination showed the surface clean, free from odor, and granulating well. I deemed it prudent, however, to repeat the caustic application. In this case, judging from the cachectic appearance and the discoloration of the skin in the femoral and inguinal regions, the systemic infection has been considerable. Patient under observation."

Stated Meeting, January 10, 1878.

Dr. J. J. Quinn, *President, in the Chair.*

Dr. C. O. Wright read a paper on

MATERNAL IMPRESSIONS AFFECTING THE FETUS IN UTERO,

maintaining that long-continued and powerful emotions may, can, and often do so modify the nutritive materials suppplied by the mother to the fetus as to leave its impress upon the fetus, and bases his paper upon a typical case.

A lady, while in the seventh week of pregnancy, had an only brother arrested for a heinous crime. Her grief and anxiety were very intense, and she was continually asking questions in regard to prison life. Upon one occasion, while visiting the jail, a prisoner was brought in shackled, and she repeatedly spoke of the sight, and hoped her brother would not be treated in that manner. It made a profound impression on her; it was on her mind for days, and upon two or three occasions dreamed she saw her brother in irons. When about five months advanced, she fell down-stairs, producing a miscarriage, and the child bore this deformity: a hare-lip; extending from the junction of the metacarpal and first phalangeal bones of the left hand was a fibrous cord passing over and attaching itself to the tip of the index-finger of the right hand, there spreading out and enveloping the fingers, as would a mitten. About an inch from the tip of the fingers, on the radial side of the right arm, was attached a fibrous cord with a loose floating end. Springing from the second toe of the left foot was a fibrous cord, passing over and wrapping two or three times around the ankle of the right leg, almost amputating it. It requires very little imagination to see the resemblance between these cords, and the "shackles" referred to. The doctor followed this recital with some views upon the general subject, quoting authorities from the time of Hippocrates down to the present, to sustain his position. In concluding he said, in conversation with a well-known physician of this city upon this subject, this idea was advanced. Taking the blood in the light, not simply of a scavenger, but as an organ, may not impressions upon the mind carry their influence to the blood; and as there seems to be no nervous connection between the mother and fetus, but a continuous blood-supply, may it not mould itself according to the impression?

Dr. Palmer.—"The questions in reference to this whole subject are, Will such and such a maternal impression influence the fetal development, and can it do so? Is it possible? Such inquiries become not only a matter of the greatest interest, but of the most serious import.

All the evidence we can derive to frame a conclusion is more or less incomplete and unsatisfactory. A large part of that which is offered has no value; really, only such instances should be admitted in evidence which show, as it were, a clear and direct relationship between the maternal mental impression as a cause, and the fetal physical development as an effect.

Now, every one must admit that impressions of an ever varied kind and degree on the maternal mind are exceedingly frequent. The nervous system of the pregnant woman is in a condition most favorable for the receiving and stamping of these impressions from without. Impressions which, under other circumstances, would hardly be noticed, much less lasting, are with pregnant women long remembered and indelibly fixed, and sometimes produce a profound effect. This is the observation of all physicians. How often is the obstetrician asked, as soon as delivery is completed, if the child is *marked*. Only the most emphatic assurance to the contrary can dissuade her mind. She may not then be persuaded that it is not marked till she has had the opportunity to inspect her child herself.

But how seldom, indeed, is any fear she has had, realized.

Thus Dr. Fisher, in the *American Journal of Insanity* for Jan., 1870, states that for twenty years, in 1,200 cases, he had asked every woman if deformity of the child had been expected. A large majority had expressed a fear of such a result, and specified the nature of the same. Out of this number, only two instances of deformity occurred, and these could not be traced to any previous impression.

Dr. Hunter made inquiry of the same nature before delivery in 2,000 cases, and in no single instance was there any connection between the maternal impression and the abnormal development of the child.

Common observation and these statistics, then, certainly prove that maternal inpressions, no matter how powerful or lasting, are not *liable* to affect the development of the fetus.

But is it possible? If we are to believe the well authenticated cases coming to us from so many sources, in which there is clearly shown to be a relationship between the mental object or emotional disturbance of the mother and the peculiar conformation of the child, this question must be answered in the affirmative. The cases reported by Esquirol, Tuke, Simpson, Montgomery, and Meadows are of this nature. The story of Laban and Jacob comes under this class. Dr. Wright's case, reported this evening, is another. Some of these, possibly, were coincidences, but we are not in the habit of classifying evidence of this kind this way. Nor will it do to call such results 'freaks of nature.'

Nature does not act by chance, but by certain fixed and unalterable laws. A special deformity or fetal monstrosity is as much an object of law as the ordinary normal physical conformation. The evidence, then, that a fetus *may* be physically changed by certain maternal mental impressions is to my mind, if not positive, strongly presumptive and probable.

How such effects *are* produced is, certainly, only speculative. The author of the paper has referred to an explanation given by Dr. Meadows, who claims that it is by nervous influence; the nerve-current jumping, as it were, space from maternal tissues to fetus, like an electrical current from one conductor to another.

Tuke, on the other hand, thinks it is through the blood. We have reason to think that the blood is modified in its character by nervous influence. Changes in this fluid, suddenly produced, must alter the nutrition of the fetus in utero. The example of the disturbance produced in a child's digestion viz., vomiting, purging, and even convulsions, by nursing the mother after a powerful mental excitement or emotional disturbance, is familiar. Here the lacteal fluid is undoubtedly modified through the nervous system. May not the blood be so changed in pregnancy and directly affect the fetus?

Moreover, the instances of the moulding of the outer physical form through the inner mental and emotional life are of daily experience."

Dr. Minnich said: "The case related by the essayist is certainly of remarkable interest, and it furnishes strong support to the theory that external impressions upon the mind of the mother may strangely affect the life or growth of the fetus in utero.

The subject of maternal impressions is a broad one, and the full discussion of it would involve many questions of heredity, the beginnings of life, and fetal growth, which the present state of biological knowledge is not competent to settle. While sudden impressions have their share, it will be well to know in what way and to what degree the unseen influences acting at the moment of conception, the subtle impressions of the subsequent months, may modify the mental capabilities no less than the physical development of the new being which is to be ushered into the world.

For a curious and ancient case of maternal impressions acting in the lower animals, we may refer to the account of the patriarch Jacob, who, in order to overreach the crafty Laban, peeled rods of poplar and chestnut, and placed them in the watering-troughs. "The flocks conceived before the rods and brought forth cattle ring-streaked, speckled, and spotted."

Dr. Thad. A. Reamy said: "The case reported by Dr. Wright, as the basis of his paper, and the paper itself, present to us the naked question of sudden influence; of marks or deformities written upon the child in utero through the agency of fright or sudden mental emotion. It shuts out the consideration of hereditary law, although I have no doubt that many cases of deformity are due to heredity and nothing else.

There are many and curious cases cited by writers upon this subject, and the one given this evening is striking, and if the doctrine be true, this case ought to be regarded as typical.

I know a man, now about thirty years old, who has upon the anterior aspect of the left leg, from the ankle upwards, a mark which quite closely resembles the common striped snake. The colors are pretty well marked, and the outline is very good. The father and mother of this man are well known to me. They were formerly from the State of New Jersey. They are quite intelligent and thoroughly credible. The mother states that, when she was about three and one-half months pregnant of this child, she was walking, in the summer time, through a meadow, barefoot. By accident she caught upon her left foot and ankle a common striped snake. She was at the moment much frightened, though she afterwards recognized the harmlessness of the reptile. Until the close of gestation she suffered much anxiety lest her child should be marked. When it was born it was not only marked, but the character and location of the mark agreed with the elements of the fright. Of course, these people have no doubt as to the immediate relation between the fright and the marking. The case should be classed with the one presented to-night.

I am not prepared to deny the possibility of such influences, but I must say that a careful examination of the whole question, as clinically elucidated, leaves it, even at this late day, *sub judice.* The proof is about as strong on one side as the other. There can be no doubt whatever that strong mental emotion —fright and anger, despair, or even overjoy, may influence the mother's vital functions so as to impair the nutrition of the child in utero; often resulting in immediate or subsequent abortion, and where abortion does not occur, these same influences may deform the child, secondarily, by an arrest of development or otherwise; but this is quite different from an immediate impression or marking of the child, as claimed by those who are committed to this doctrine.

On this subject, the well-known statistics of Baron Larrey, recently quoted by Tanner, are in point. He states that, after the siege of Landau, in 1793, of 92 children born in the district soon after, 16 died at the moment of birth, 33 died within ten months, 8 became idiotic, and 2 were born with several of their bones fractured.

A few years ago, I had under my charge some cases of small-pox. In one house there were three cases. One of the subjects was a woman pregnant about eight months. She had been vaccinated and had a fair cicatrix. In her case the disease was rather too severe for varioloid, but unusually mild for variola, so that I was unable to determine how far she had been protected by the vaccination. The eruption, though sparse, was well-pronounced; at several points thorough pustulation occurred. She was delivered rather prematurely when the pustules had subsided. The child had, when born, small-pox—the pustules just appearing. The case, so far as the child was concerned, was typical. The child recovered.

This, with the cases above referred to, throws light upon the question of physiological relation between mother and child. It came forcibly to my mind a few months since, when reading, in the AMERICAN JOURNAL OF OBSTETRICS, the able and instructive discussion which took place in the New York Obstetrical Society, as to the extent to which the child in utero could be influenced by drugs administered to the mother—a discussion participated in by some of the ablest men in the profession in that city.

But these cases prove nothing really as to maternal impressions and fetal deformities.

The few cases known to have followed fright may, after all, have been mere coincidences. So many pregnant women are at all periods of gestation subjected to influences calculated to produce powerful impressions, and yet so few children are marked, as to assure us that, if there is any direct relation, there are but few maternal nervous systems susceptible of executing it.

I have seen quite a number of cases of so-called mother's marks and deformities of structure, I mean cases occurring in my own practice, but in every instance, so far as I can remember, the deformity startled the parents at the time of birth, being wholly unexpected. Under the common belief among the laity in the truth of the law, generally in such cases all the days and weeks of the gestation which has just ended are reviewed, and generally some fright can be recalled, which is made to account for the misfortune, but certainly such proof amounts to nothing all.

On the other hand, in an attendance upon more than two thousand cases of labor, I have repeatedly witnessed the most intense mental solicitude on the part of parents, reaching in some cases, in the mother, a degree that was painful, lest the child should be born deformed, she having witnessed some horrible scene of blood, or of deformity, or been frightened during pregnancy, the fear burning into her very nature during the whole time, and yet I have not in a single instance, under such circumstances, seen a child bearing the evidence of her fears.

All are familiar with the investigations of Dr. Wm. Hunter, made in the Lying-in Hospital in London. In two thousand cases, there was not a single instance in which there was any coincidence between the fright or accident or longings of the mother and the deformity of the child.[1]

Now, I do not deny the truth of the doctrine of maternal impressions upon the fetus; and I am sure, if it be true, the theory suggested by Dr. Wright, that these impressions are wrought through the agency of the mother's blood, seems quite plausible, from at least two considerations.

1st.—The well-known fact that every blood-cell made in the mother's system is dependent upon and subject to nervous influence, both as to the formation of the primary cells and their construction into blood.

2d.—That there is no direct nervous communication between mother and child in utero.

I have generally consented to the affirmative side of the question presented to-night; but, as already intimated, I do not by any means consider it conclusively proven, notwithstanding the apt reference made to-night by my friend Dr. Minnich to the noted historic example of Jacob's striped cattle."

The following officers were elected for the year 1878:
President, Dr. J. J. QUINN.
Vice-President, Dr. W. L. BROWN.
Recording Secretary, Dr. J. W. UNDERHILL.
Corresponding Secretary, Dr. C. O. WRIGHT.
Treasurer, Dr. A. J. MILES.

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[1] See Tanner on Diseases of Infancy and Childhood.

QUARTERLY REPORT ON OBSTETRICS, GYNECOLOGY, AND PEDIATRICS.

Prepared by Henry Banga, M.D., Chicago: J. Fewsmith, Jr., M.D., Newark; F. P. Foster, M.D., and Rudolph Tauszky, M.D., New York.

OBSTETRICS.

1. Cesarean Section, with and without Extirpation of the Uterus.

In the *Wiener Medizinische Wochenschrift*, 1878, Nos. 4, 5, 6, 7, 11, 12, 13, 14, **Prof. Spaeth**, of Vienna, gives the details of four cases of Cesarean section which occurred under his observation from 1852 to 1874. They all ended fatally. He considers hemorrhage the chief source of danger, and that it is not done away with by closing the uterine wound with sutures, for they cut through the tissue of the uterus, no matter what material they are made of, and even when the organ is secured to the abdominal wound. There is thus no sure preventive of the escape of blood and uterine secretions into the abdominal cavity. These considerations, together with the favorable results in Porro's case (which he quotes in full), led the author to the determination to remove the uterus in any future case of Cesarean section in which there might seem to be any probability of hemorrhage.

A woman, 40 years old, pregnant for the tenth time, was admitted to the author's clinic May 29th, 1877. In her sixth pregnancy, craniotomy was performed. At that time the conjugate was 7.5 cm.; the distance between the anterior superior spines of the ilia, 26 cm.; between the crests of the ilia, 29 cm.; and between the trochanters, 29.7 cm. Afterwards, three abortions took place. In regard to the present pregnancy, she could only say that she first felt life Jan. 12th, 1877, and so expected to be confined early in June. For the preceding five years her osteomalacia had manifested itself by gouty pains in all the bones, but particularaly those of the lower limbs. On admission, her appearance was very unfavorable. She was emaciated and pale, the skin was dull and flabby, and the lower limbs were edematous. Examination of the chest revealed an old bronchial catarrh. The urine was scanty, of a dusky yellow color, turbid, of acid reaction, sp. gr. 1.028, and rich in albumen, and pus corpuscles and epithelial scales were found in the abundant sediment, but no fibrinous casts. The child lay transversely. The external conjugate was 17 cm.; the distance between the anterior superior spines of the ilia, 21 cm.; between the crests of the ilia, 28.3 cm.; between the trochanters, 28 cm. The tuberosities of the ischia were about 7 cm. apart. The promontory was 9.5 cm. from the lower border of the symphysis, making the conjugate about 8 cm. The fore and middle fingers could be laid together between the promontory and the nearest point of the linea innominata on the left side, but not on the right. The Cesarean operation was held to be absolutely indicated. Attempts to improve the woman's general condition resulted in only a slight decrease of the edema of the feet.

Labor came on June 22d. The transverse presentation had given place to one of the head in the second position. The os uteri having become sufficiently dilated to admit three fingers, and the pains being strong, the patient was put under chloroform. All who were to take part in the operation carefully washed their hands in a 1 per-cent solution of carbolic acid. After a hypodermic injection of ergotin, the bladder was emptied, and its relations with the lower portion of the uterus ascertained by means of a catheter dipped in carbolized oil, and the abdomen was washed with carbolic acid. The uterus having now been brought as nearly as possible into coincidence with the median line, an incision was made from 2 cm. below the umbilicus to about 5 cm. above the symphysis. There was no bleeding from the abdominal wall, and not much on cutting into the uterus, as the placenta was not attached to its anterior wall. On opening the amniotic sac, but little liquor amnii appeared, and the left upper limb escaped through the wound. The child was at once turned and extracted. The placenta and membranes were rapidly removed, and the uterus, which was rather flaccid, lifted out of the abdomen, that it might be more easily stimulated to contraction, and any flow of blood into the peritoneal cavity avoided. The organ being held perpendicular to the surface of the abdomen, and the abdominal wall pressed inwards around its lower portion, manipulation of the organ, together with the application of sponges dipped in ice-water to the cut surfaces, and the site of the placental insertion, failed to control the bleeding.

Extirpation of the uterus being therefore resolved upon, the chain of an ecraseur was thrown around the organ at the level of the os internum, embracing the Fallopian tubes at about their middle, so as to leave the ovaries. The chain was rapidly tightened to the point of perfectly blanching the uterus, and checking all trace of hemorrhage from the incision and the placental site. The uterus was then divided with a knife about 3 or 4 cm. above the point of constriction. The stump was further reduced by taking off a slice 2 cm. thick and trimming the edges, when it spread out into the shape of a rosette, and showed not the slightest tendency to retract into the abdominal cavity. The latter was now carefully cleansed, scarcely a trace of blood being found between the intestinal coils. Four drainage tubes were inserted—two in Douglas' space, and two higher up on either side. The wound was cleansed and closed snugly around the pedicle with seven button-sutures of silk, and then dressed after the method of Lister. The whole operation occupied rather less than an hour. On June 25th, the distal portion of the pedicle was found quite separated, and the proximal portion was adherent to the abdominal wall, forming part of a laudably suppurating surface on a level with the skin of the abdomen. The last drainage tube was removed July 5th, and on the 30th the wound was entirely healed, and the patient allowed to sit up. Fungous granulations afterwards sprouted from the lower end of the wound, giving considerable trouble. They were removed with a Pacquelin's cautery, and again with scissors, after which the wound was dressed with a solution of sesquichloride of iron, which proved effectual.

The second case was that of a woman admitted in labor with her fourth child. She was jaundiced and ill nourished, and her condition seemed unpromising. The uterus was in a state of tetanic contraction ; the head presented in the first position—heart-sounds inaudible. The liquor amnii was offensive and discolored. The pelvis was so contracted by osteomalacia as to indicate the Cesarean operation absolutely, although the prospect seemed hopeless. The operation was at once performed (Sept. 2d) in the same manner as in the first case, but, as removal of the uterus was decided upon at the outset, ergot was not used. The uterine incision bled profusely, the placenta being implanted anteriorly. To avoid additional hemorrhage from separating the placenta, the attempt was made to remove the uterus and placenta together, but the mass proved so large as to impede the application of the chain. The attempt was therefore abandoned, and the placenta removed, after which the uterus was treated as in the first case, except that the chain was applied lower —below the middle of the cervix, on which account the pedicle retracted in a striking manner, after the removal of the uterus and its expendages. It was transfixed with a needle below the grasp of the eraseur, and fixed to the abdominal wall at the lower end of the incision. The patient did badly from the first, and died Sept. 10th, of pyemia.

The author looks upon Porro's operation as very promising. Porro's case was the first Cesarean section which had ever succeeded at the Pavia lying-in hospital, and his own was the first which had proved successful at the Vienna lying-in hospital during the present century, whilst even in his second case the method was manifestly of some avail, since death did not occur until the eighth day, and hemorrhage was certainly prevented. The advantages of the method are : (1) It controls primary hemorrhage ; (2) it does away with the dangerous proceeding of shutting up within the abdomen a wounded organ, liable to become flaccid and allow of the escape of blood, etc., into the peritoneal cavity ; (3) the traumatic surface left is smaller ; (4) this surface is wholly external and accessible to direct treatment ; (5) by the removal of the endometrium a large field for the development of puerperal diseases is got rid of ; (6) when resolved upon beforehand, we need not wait for uterine action ; (7) it takes less time than would otherwise be consumed in checking hemorrhage ; (8) it avoids the dangers of future pregnancies, by a justifiable mutilation.

As regards the technics of the operation ; (1) Ligation of the uterus before removing the placenta may be desirable in cases of anterior implantation, and is to be recommended when the shape and size of the uterus are favorable, care being taken not to include any portion of the membranes in the cervical canal, as agglutination would thus be hindered and the formation of a cervical fistula favored. (2) The chain of the ecraseur is preferable to the simple ligature as it is less likely to slip out of place ; but it should not be drawn too tight, as it might easily cut into the numerous large veins at the side of the uterus. The handle of the instrument may be removed, leaving only the chain attached. (3) The best situation for the ligature is a point just below the os internum. (4) Both ovaries had better be removed in case the chain can conveniently be applied below them. (5) One or more subsequent tightenings of the ligature may be advisable.[1] F. P. F.

2. On the Physiology of the Amnion. (*Annales de Gynécologie*, April, 1878.)

Dr. A. Zebedeff, of St. Petersburg, relates a case of triplets, in which one of the three amniotic sacs became ruptured during gestation, and retracted to the form of a small sleeve-like sheath surrounding the placental insertion of the cord, whilst the denuded chorion became inflamed and thickened. The rupture was accounted for by marks on the child's left hand, showing that the hand had at some time been attached to the amnion through the medium of "fibres of Simonart." The children were two males and a female. The child in question, the second one born, was a male, and in development it nearly equalled the other male and exceeded the female. The author concludes: (1) rupture of the amnion may take place at an early period of pregnancy, after which the injured membrane separates from the chorion and remains retracted up to the end of gestation; (2) rupture of the amnion does not necessarily lead to that of the chorion, *i. e.*, to premature labor; (3) the immediate contact of the liquor amnii with the inner surface of the denuded chorion irritates the latter, producing a chronic inflammation, which gives rise to a general hypertrophy of the membrane, with hyperplasia of its elements in the form of papillæ; (4) early rupture of the amnion does not hinder the regular development of the child. F. P. F.

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[1] An additional operation has recently been reported by Dr. P. Mueller, of Berne, in the *Centralbl. f. Gynäk.*, II., 5, March 2d. It was performed Febr. 4th, last. The uterus was lifted out of the abdominal cavity, and the cervix constricted before the uterine incision was made, whereby hemorrhage and flow of amniotic fluid into the peritoneal cavity were avoided. Child decomposed. Mother recovered.—Ed.

3. CONTRIBUTIONS TO EXTRA-UTERINE PREGNANCY. By DR. COHNSTEIN. (*Arch. f. Gynaek.*, XII., 3.)

The first part of his article C. devotes to the history of a case of extra-uterine pregnancy, which was successfully treated by injections of morphia, at Friedreich's clinic, Heidelberg. The following are the prominent features of the case: A healthy servant-girl, age 25, was admitted March 2d, 1877, complaining of pains in the abdomen and back, vomiting, costiveness, ischuria. Menses had ceased since seven weeks, and were scarce at the last term. Possibility of pregnancy admitted. On March 28th, when the diagnosis of extrauterine pregnancy was established (subsequent to the expulsion of the membrana decidua *in toto*), 0.01 ($\frac{1}{6}$ gr.) of morph. muriat. was injected through the vagina into the tumor, which was situated in the left hypogastric region, of the size of a fist. On April 12th, 14th, 18th, and 21st, the injection was repeated, this time through the abdominal surface. Before the solution of morphia was injected, one or two syringes of a liquid of a yellowish serous character were drawn from the tumor with an aspirator. These injections relieved the pains in the back and in the abdomen, and also reduced the size of the tumor after the second injection. After some five or six weeks, the patient was doing well, a small remnant of the abdominal tumor interfering in no way with her general health. After a long promenade, however, June 23d, she became sick with perimetritis. The tumor, within two weeks, had acquired the size of the head of a child and become very tender; fever rapidly brought down the general state of nutrition. August 7th, 85 ccm. (3 ounces) of a sanguinolent, serous fluid were drawn from the tumor, through the abdominal surface, upon which the tumor slowly decreased, becoming tense and painless, while at the same time the patient recovered her former strength. On September 15th, she seemed out of danger of any relapse.

In the second part of his article, C. gives the following statistics on extra-uterine pregnancy, based upon a careful synopsis of the stray literature on that subject.

1. As regards the *frequency* of the *different forms* of extrauterine pregnancy, C. gives, for abdominal, tubal, and ovarian pregnancy, the ratio 32 : 26 : 4 (de Semct, 43 : 33.5 : 11).

The diagnosis of ovarian pr. may be established: *a.* if the corresponding ovary is wanting; *b.* if the fetal bag is inclosed between the two layers of the broad ligament; *c.* if the lamellar texture of the covering of the fetus, the presence of cylindric epithelium of the inner surface and direct passage of the albuginea into the walls of the fetal bag can be demonstrated; *d.* if follicles or a corpus luteum is present in the immediate proximity of the fetal tumor.

2. The *menses*, as a rule, disappear during extr.-uter. preg.; for seven to nine months in case of abdominal preg., and for four to ten weeks in case of tubal gravidity, as is the case also with ovarian gravidity. If, after amenorrhea prevailed for some time, discharge of bloods recurs, it is of a most irregular and protracted character, and as such a most valuable symptom for the diagnosis of the disorder in question.

3. For the frequency of extr.-uter. preg. during the 2d, 3d, and 4th decades, C. gives the following ratio: 37 : 50 : 11.5; thus showing a decided preponderance of the patients between thirty and forty years of age.

4. As regards the *relation* between *primi-* and *multiparæ*, C. furnishes the following figures:

Abdominal pregnancy		17 : 83	(v. Hecker)	14 : 86
Tubal	“	25 : 75		30 : 70
Interstitial	“	38 : 62		19 : 80
Ovarian	“	15 : 84		

Among the primiparæ, C. found 70 per cent to be over thirty years, who were married, but continued childless for several years. Among the multiparæ, those who had born one to three times constitute 89.2 per cent, of whom 44.7 per cent had had but one child; which seems to contradict the opinion of Kiwisch, that fertility is conducive to extr.-uter. preg.

5. As regards the *influence* extrauterine pregnancy exerts upon the *uterus*, a great variety of opinions have been emitted, which C. brings under the following heads:

a. *Uterus enlarged. Membrana decidua either closely adhering to its basis or lying in the uterine cavity, partially or totally detached.* These are the most frequent cases.

b. *Uterus enlarged, but no decidua.* While in some of these cases the absence of labor and discharge of blood explain also the absence of the membrana decidua, there may be some reason to believe that in other cases the expulsion of the decidua has been overlooked, or its tissues disappeared by a process of early atrophy.

c. *Neither the parenchyma proper of the uterus nor its mucous membrane participate in the transformation incident to pregnancy*, which may be accounted for by the fact that the hyperplastical process came to a standstill or had been followed by a retrogressive process, caused by the premature death of the fetus, or frequent uterine contractions, or hemorrhage. In case of uterus bicornis, the not impregnated half of the uterine system remained intact. As regards the larger size of the uterus in case of tubal preg. as compared with abdominal preg., the fact may be adduced that tubal preg. is more apt to come to an early end (by diffuse peritonitis) and thus to provide the pathologist with a specimen belonging to an earlier stage of development of the disorder.

d. *In very few cases the uterus does not at all participate in the change, while its mucous membrane is subjected to a certain degree of hyperplasy.*

e. *Those cases also are not very frequent, where the membrana decidua in toto or parts of it are found in the discharges during the metrorrhagia accompanying extr.-uter. pregnancy.* Out of 600 cases, only 39 showed this symptom, which, however, is of the highest importance as regards the diagnosis. The expulsion of the decidua follows true labor, which is caused by the death of the fetus, either from a natural cause or some surgical interference (puncture). Sometimes the introduction of the finger or of a probe into the uterus for diagnostic purpose provokes uterine contractions and the discharge of the decidua.

The presence of decidua in the bloody discharges of the uterus proves the existence of a retrogressive stage of the disorder.

f. A plug of uterine mucous does not always close up the disorder, nor does the external os always open under the influence of uterine contractions.

As regards surgical interference in case of extr.-uter. preg. at full term, C. thinks that elytrotomy should be performed when the fetus died before its full development and had settled down in the pelvis; while he would resort to laparotomy where there is a chance of getting a living child, or where the fetus is still above the brim of the pelvis. H. B.

4. On Funicular Hemorrhage.

The *Allg. Med. Central-Zeitung*, Jan. 30th, 1878, gives an abstract from *Mittheilungen des Vereins der Aerzte in Nieder-Oesterreich*, No. 1, 1878, of an article by **Prof. E. Hoffman**, in which he discusses the reasons why hemorrhage does not usually take place when the funis is not tied, and under what circumstances it does occur. Diminished blood-pressure in the abdominal aorta, due to the developement of the pulmonary circulation and to the relative weakness of the left ventricle—a pressure not more than half as strong as exists in the adult, renders it improbable that very profuse bleeding should take place from the umbilical arteries, even were their structure like that of arteries in general, especially if we take into account their length, their acute angle with the hypogastrics, and the stretching to which they are subjected by the inspiratory movements of the abdominal wall. There is, however, a special peculiarity of the muscular fibres of these arteries, in that the longitudinal fibres follow a spiral course, their contraction therefore serving to shorten the vessels, and to throw their lining membrane into longitudinal and oblique folds, whereby the closure of the lumen is more secure than would result from the mere contraction of circular fibres. The greater portion of the intra-abdominal part of the arteries, however, continues pervious and pulsating, so that in case of any insufficiency in the action of the spiral fibres hemorrhage may occur. Such insufficiency may take place in weak, immature, or ill-nourished children, and in such, as well as in others, the contraction, sufficient at first, may afterwards become inadequate; whence probably the fact that in most cases of funicular hemorrhage the bleeding does not occur until some hours after birth. Division of the cord too near the navel may favor bleeding, since then the free end of the arteries is nearer to circulating blood than has hitherto been supposed. Asphyxia or any impediments to the return of blood to the right side of the heart, such as choking, or compression of the upper abdominal and lower thoracic region by faulty bandaging, etc., also renders hemorrhage liable to occur. F. P. F.

5. Contribution to the Anatomy of the Cervix Uteri during Gestation and Parturition. By Dr. Otto Kuestner. (*Arch. f. Gynaek.*, XII., 3.)

It has been generally accepted that the os internum separates the uterine cavity from the canal of the cervix, up to the moment when the action of labor begins, and that, therefore, the gradual shortening of the neck, at successive stages of gestation, does not depend on its merging into the cavity of the uterus. K. objects to this supposition, founding his arguments upon microscopical investigations, which have to be regarded as decisive, as far as they show the possibility of limiting the boundaries of the cervical cavity by means of the cylindrical epithelium, which, it is well known, is characteristic of the cervix. Thus, as far as the true ciliated epithelium or the multiple layers of cylindrical epithelium extend, so far must we recognize the tissues as belonging to the cervix. From his carefully conducted researches, K. is able to set forth the following conclusions : "1. The dilatation of the superior part of the cervix occurs early during pregnancy and without preliminary pains. The hyperplasia in the dilated portion comprises the cervical mucous membrane in toto, as well as its constituent elements ; thereby, the mucous membrane resembles the decidua, the crypts of the cervix being comparable to the uterine glands. The cilia of the epithelium are not destroyed until the end of pregnancy ; even after parturition the cylindrical epithelium can still be recognized.—By the dilatation of its upper part, the cervical canal is shortened, so that at the end of pregnancy there remains only a part of the original length of the neck.

2. A detachment of the membranes from their basis cannot be demonstrated during the last month of pregnancy.

3. After birth, the cervix is very long, the cervical mucous membrane extends upwards to the os described by Braune (os internum uteri) and thus lines the entire inferior uterine segment." H. B.

SUGAR IN THE URINE OF LYING-IN PATIENTS. By DR. V. JOHANNOVSKY. (*Archiv f. Gynaek.*, XII., 3.)

By careful chemical and physical examination, the urine of 4 lying-in patients out of 25 contained 100 ccm. of urine, respectively, 0.54—0.50—0.67—1.59 gm. of sugar. In these 4 cases, the breasts were tense, tender, distended with milk, while in the remaining 21 cases the function of the mammæ continued normal. Therefore J. is led to find the main cause of the appearance of sugar in the urine of lying-in patients to be mechanical retention of milk in the mamma, however produced. On the other hand, he thinks that copious secretion of milk and free development of the gland are of importance only as far as these conditions are apt to facilitate retention.

H. B.

6. RETENTION OF THE PLACENTA AFTER ABORTION.

In the *Archives de Tocologie*, for *December*, 1877, DR. HERVIEUX relates the case of a woman who entered the Maternité in the sixth month of pregnancy. The membranes broke on the day of her admission, and eleven days afterwards the fetus was expelled. The pains ceased at once, and there was no bloody flow. Seven days later, a few clots and a little liquid blood were evacuated. The cervix had then closed and resumed its shape. The patient was now transferred to Dr. Hervieux's service. Her general condition was satisfactory. There was neither fever nor lochial discharge, and there had been no lochia previously. The face was pale, and the mucous membranes anemic, but the patient stated that such had been the case before the abortion. On the seventeenth day after the birth of the child, an abundant hemorrhage took place. Fifteen grains of ergot failing to stop it, the vagina was plugged. The hemorrhage ceased, but during the night syncope occurred, and the interne found the uterus so distended with clots that the fundus, which had previously been no higher than the pubes, had now risen to the level of the umbilicus. The tampon was removed, and fifteen grains more of ergot given. The uterus at once contracted, expelling a great number of clots, and in a few minutes it was but three finger-breadths above the pubes. The hemorrhage ceased entirely, and the patient slept quietly the rest of the night. For four days there was a slight flow of reddish liquid of a disagreeable, but not excessively fetid odor, readily corrected by injections of chlorinated chamomile water. On the 21st day after the birth of the child, uterine pains took place, and the placenta was expelled in a state of almost complete preservation. It was firm, not easily torn, and did not exhale any offensive smell, but at one point on its border it had become somewhat softened. The uterus immediately contracted, retreated behind the pubes, and could no longer be felt by palpation, and the patient's recovery was uninterrupted.

The author considers that in such cases the placenta remains adherent and in vascular communication with the uterus. He does not doubt that, in this case, partial if not entire separation of the placenta caused the hemorrhage which took place four days before its expulsion. The funis was expelled the day after the birth of the child. The entire absence of threatening symptoms, together with the great difficulty and danger which would have attended the forcible dilatation of the cervix, not only, in his opinion, rendered the expectant treatment justifiable, but made any other course inadmissible. In regard to statistics, which seem to show the very great advantages of artificial removal of the placenta, we should take into account, he says, that a great number of the artificial deliveries of the placenta, which have resulted happily, have not required any violence, and he confronts them with a report by Kastner, who cites 69 deaths among 429 cases of early artificial removal of the placenta; adding that, moreover, it is presumable that many of the women who died undelivered had been the subjects of fruitless and more or less repeated efforts at extraction. F. P. F.

GYNECOLOGY.

7. Extirpation of the Entire Uterus by a New Method.

In No. 133 of *Volkmann's Sammlung Klinischer Vorträge*, **Dr. W. A. Freund**, of Breslau, describes a case of cancer of the uterus, in which, the disease being limited to the uterus itself, he successfully removed the whole organ by the following operation:—The bladder and rectum having been emptied, and the uterine cavity carefully washed out with a 10 per cent solution of carbolic acid, the patient was placed on a table, with her hips higher than her head. The abdominal cavity was opened by an incision beginning three finger-breadths below the umbilicus, and reaching nearly to the symphysis. The intestinal coils found in the pelvis were raised out of that cavity and held away from it by means of a wet napkin carried into Douglas' cul-de-sac. The body of the uterus was freed by manual disruption of extensive but thin perimetritic false membranes, which had partially held it in a state of retroversion, and a ligature passed through it, by means of which it was held perfectly under control without the necessity of encroaching upon the operator's space by the introduction of a hand. Each broad ligament was now tied in three sections; the upper ligature passed through the substance of the tube above, and through that of the ovarian ligament below; the middle ligature transfixed the substance of the ovarian ligament above, and that of the round ligament below; the lower ligature pierced the round ligament above, and the lateral vault of the vagina (twice) below—being first passed through the anterior part of the lateral vaginal vault into the vagina, in front of the base of the broad ligament, and then out from the vagina, behind the broad ligament. Thus the needle avoided those portions of the broad ligament which inclosed large veins. [The arrangement of the ligatures is represented in cuts. It scarcely differs from that known as the "black-and-white ligature" sometimes used in tying elongated nevi, flap-like excrescences, etc.—Rep.] The three ligatures having been made fast on either side, the cervix uteri was set free from the bladder by cutting through the peritoneum at the bottom of the utero-vesical pouch; the anterior wall of the vagina was divided, and then its posterior wall, by an incision at the bottom of Douglas' cul-de-sac; and finally the broad ligaments were cut across inside the ligatures, and the two lateral walls of the vaginal vault—and thus the uterus was severed from its attachments, and removed from the pelvis. The bleeding was scarcely worthy of mention, only one small artery, at the front of the fornix vaginæ, requiring separate ligation. The pelvic cavity was carefully washed out with carbolic acid, the long threads of the six ligatures were drawn down through the opening into the vagina, and made tense, producing a sort of prolapse of the broad ligaments, and of those portions of the pelvic peritoneum covering the anterior and posterior walls of the pelvis, into the vagina. By strong traction upon the upper ligatures a transverse slit was formed, lying between the bladder and the rectum, constituted by the uninjured portions of the anterior and posterior layers of the pelvic peritoneum, the cut edges hanging down free in the vagina, together with the ligated stumps of the broad ligaments, whilst the fimbriated extremity of the Fallopian tube and the ovary stood upright at either end of the slit. A tampon soaked in ten per cent carbolized oil was laid in the vaginal wound, and a string attached to it (party-colored to distinguish it from the ligatures) was carried through into the vagina; the newly established relations of the pelvic organs were then fixed in a simple manner by inserting a close row of sutures to unite the apposed surfaces of uninjured peritoneum. After carefully cleansing the pelvic cavity, and applying two deep sutures for the purpose of fixing the peritoneum of the anterior pelvic wall, which had sagged down a little during the operation by reason of the strain on the loose subserous cellular tissues, the abdominal wound was closed with silver wire sutures, which included the peritoneum, and antiseptic wadding applied. The operation, including the preliminaries and the dressing, lasted about two hours.

Moderate fever, due to suppuration in the abdominal wound, arose on the third day, and lasted 36 hours, disappearing upon evacuating the pus. The healing then proceeded undisturbed. The day after the operation, the tampon was found in the vagina. The ligatures were removed on the 14th day. On the 19th day a small point of suppuration of the abdominal wound alone remained, and the opening into the vagina had contracted to the size of a quill.[1] F. P. F.

8. EXTIRPATION OF THE OVARIES AS A THERAPEUTIC MEASURE.

In an article on Battey's operation, in the *Wiener Medizinische Wochenschrift*, 1878, Nos. 7 and 8, DR. HERMANN BEIGEL briefly summarizes the history of the operation, and ranges himself with those who think that there is no such close connection between ovulation and menstruation as to warrant this grave operation for the purpose of obtaining a premature menopause, especially as the dangerous hemorrhages, in cases of fibro-myoma of the uterus, do not always coincide with menstrual periods. In those excessively painful affections of the ovaries, however, which make life miserable and tend to shorten its duration, the operation is justifiable, and the author insists that, in the great majority of these cases, thorough investigation will show evidence, if only microscopical, of positive structural disease—generally a disappearance of the follicles, with cystic degeneration of the stroma.

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[1] A paper giving minutiæ of the technics of the operation, and after-treatment has just been published by Freund in the *Centralbl. f. Gynäk.*, Vol. II., No. 12, June 8th. F. mentions having performed the operation five times, and cured three patients. It is also applicable to cases of sarcoma of the body of the uterus.—ED.

F. P. F.

9. THE DANGERS OF OPIUM IN HYSTERIA.

M. ANDRÉ MARTIN (Dangers des préparations opiacées chez les femmes hystériques.—*Le Mouvement Medical*, 1877, Nos. 43 and 44) relates two cases of poisoning with opium which he met with in hysterical women during a period of three years, and attributes to the subjects of hysteria a peculiar susceptibility to opium. He thinks that the physiological nature of hysteria, with its sudden modifications of the circulatory system and its subordination of the nervous centres to the sympathetic, should deter practitioners from the use of opium in such cases. In regard to the treatment of hysteria with large doses of opium, he points out that M. Voisin and others, who have employed such treatment, have had to begin with minimum doses, and gradually accustom the system to the drug. He closes with the following conclusions: (1) On account of the varied derangements which the functions of the nervous system undergo in hysteria, particularly the vaso-motor power, opium and its alkaloids should be wholly proscribed in the curative treatment of this affection. (2) If it be thought necessary, to fulfil special indications, to inject morphine subcutaneously in an hysterical woman, the susceptibility should be most carefully tested, and only the smallest doses used at first. (3) In case of poisoning, fifteen grains of sulphate of quinia should be administered, in infusion of coffee, by the rectum, coffee being at the same time given in as large amount as possible, either by the mouth or by the rectum. F. P. F.

10. THE PATHOLOGY AND TREATMENT OF URETERO-VAGINAL FISTULÆ. ILLUSTRATING THE VALUE OF BOZEMAN'S METHOD OF OPERATING. BY LOUIS BANDL, Vienna (*Reprint from Wiener Med. Wochenschrift*, 1878.)

Only a few cases of uretero-vaginal fistulæ are on record. Landau (*Archiv f. Gynaek*, Vol. 9 p. 426), one year ago, could find the records of only four cases. These are: two by Simon of Heidelberg: in one of these there was also present a vesico-vaginal fistula; one case has been reported by Alquié: one by Panas; a fifth one was described by Landau himself. In this there was a very small slit-like opening at the fornix of the vagina on the left side. A thin sound could easily be pushed from this opening toward the left kidney to the depth of about twenty centimetres. It was also easy to pass the sound through the same slit-shaped opening into the bladder through a short channel, by bending the instrument to an acute angle. This short channel was the lower end of the non-obliterated ureter, according to Landau's view. A sixth case, "Rupture of the whole Vesico-vaginal Wall, on the left side," is mentioned by Winckel, "Handbook of the Diseases of Women," pp. 111-77. No. 281. On the left side, the stump of the left ureter opens on the anterior lip of the cervix uteri.

Before entering upon the consideration of the disease, it seems appropriate to review the relation of the opening of the ureters in the cases of large vesico-vaginal deficiencies.

It is not a rare occurrence that one or both openings of the ureters are visible on the upper border of the fistula in cases of large vesico-vaginal defects. The occasional dribbling of urine can be perceived from the openings of the ureters, and it is not at all difficult to pass a thin catheter (Charrière, No. 2) through them towards one or both kidneys without danger, or even without pain. If carefully examined. we find in such patients that part of the ureter (one centimetre in length) which runs within the vesical mucous membrane and the subjacent loose tissue, entirely uninjured, or we find a smaller. sometimes a larger portion of this had been destroyed through the same agency that caused the vesico-vaginal fistula. In one case, B. also saw a small portion of the ureter (two millimetres in extent), which pierces the wall of the bladder, entirely destroyed. This separated end-piece of the ureter (one centimetre long) was coiled up with the mucosa of the bladder toward the cavity of the latter organ, which he could draw out with a tenaculum and pass a sound through it. It fitted exactly and could be attached to the upper muscular wall of the bladder at the very spot where the ureter opened into it, and from which the escape of urine could be easily seen. A sound passed readily through it toward the kidney, if introduced at this point. Also that portion of the ureter (fifteen millimetres long) that pierces the bladder in an oblique direction, running from behind and upward downwards, towards the trigonum Lieutaudii, may have been destroyed by the gaugrenous process, and after having healed and the edges are covered over by newly-formed tissue, it can be seen that the ureter is connected with the bladder through a little muscular bridge only, or the former had entirely separated from the latter, and the ureter then abnormally opens into the vagina.

This pathological condition we call "Uretero-Vesico-Vaginal Fistula." If the defect in the vesico-vaginal septum is large, the opening of the ureter can be easily discovered, in most cases, by the eye, especially then when part of that portion of the ureter which connects with the bladder has been destroyed. This opening is usually gaping, and the occasional dribbling of urine may be noticed from it. If this deficiency has become exceedingly small from contraction, and through shrinking, or if it had been very small from the beginning, and the ureter opens into its edge (or margin), or if the opening of the ureter into the bladder is normal and is located in the mucous membrane of the same, it may not be found even by the most skilful operator. The opening of the ureter may connect with the vagina, and may have been drawn away from the wall of the bladder by a process of cicatrization, or a portion of the ureter which runs outside of the bladder may have been destroyed through the abnormal pressure of the child upon the soft parts, and when sloughing of these and cicatricial shrinking of the margins occur, it can happen that the opening of the ureter may be further away from the bladder, and becoming attached to the vagina or in the cicatricial tissue of the same, we then have a uretero-vaginal fistula, besides having also a vesico-vaginal fistula; the ureter opening in such cases into the vagina. A smaller or larger portion of the ureter with that part that perforates the wall of the bladder is then wanting.

Defects of the bladder may heal spontaneously. This is not a rare occurrence soon after the accident; especially is this the case if the uppermost portions of the vagina and a part of the uterus have been destroyed at the same time. The mouth of the ureter alone remains open. We then have the disease termed "Uretero-vaginal Fistula," some remarks regarding the treatment of which, in three cases, Bandl desires herewith to bring to the notice of the profession. According to the smaller or larger size of the loss of substance of the bladder and the vagina, the ureter will be nearer or farther away from the os uteri.

Where at the same time a larger or smaller defect of the bladder is present, there seems to have been the same etiology regarding the causation of the disease under consideration. So it was in Simon's first case, which he described in 1856, also in Winckel's and his own herein described.

It is more difficult to explain the origin of those cases where, when first observed, only a uretero-vaginal fistula could be found. The vagina was normal as far as can be judged from the published description of the cases, with the exception that the ureter opened into it, one to two cm. distant from the cervix uteri. So it was in Simon's second case, in Alquié's, and also in that of Panas. In the one published by Landau (Spiegelberg's Clinic) a pessary that had been worn for a long time caused the trouble. Landau called this sort of fistulæ, "vagino-ureteral fistulæ occurring in the fornix," and Winckel denominates them: "high uretero-vaginal fistulæ." One case of this description is the third one described by Bandl. He describes another origin of uretero-vaginal fistula, and mentions two cases which, to his astonishment, have never before been published, and which he saw himself. Unknown to the operator, and of course unintentionally, a larger or smaller opening was made accidentally into the ureter while operating for vesico-vaginal fistula. This led to the formation of a uretero-vaginal fistula, only permeable to a very thin surgical sound. Bandl described this case in the latter part of 1875. The opening of the right ureter was visible; of the left ureter nothing could be found. The deficiency did not remain on the right side of the cicatrix, as Simon thought and represented, but on the left side, on which the ureter could not be seen at all. Between the last and the next suture to it, there remained a small opening which was very correctly recognized by Bozeman as having been produced by the inclusion of the ureter which had been unintentionally cut into by the operator. To do justice to Bozeman, B. cites that part of the article that appeared last year against Bozeman's method. Simon states: "I must here return to the consideration of including the ureter into the suture. Bozeman ascribes a small fistula remaining behind to this circumstance in the second case which he operated in Vienna. But he states, in the history of his case, that the visible opening of the ureter (the right), one cm. long, towards the bladder, was cut into; and it is, therefore, difficult to imagine that this defect should not have been caused by the next to the last, and not by the last suture which should have pressed back the lumen of the ureter; the remaining fistula having corresponded to the next but last suture." Since the visible opening of the ureter was on the upper margin of the *right side*, and the small fistula remained on the *left side*, Simon's objection is valueless and unfounded. Simon further says, "Moreover, it seems to me that, in this case also, the cause of the remaining small fistula has been produced in another way. If it were correct, as Bozeman asserts, that he has included the ureter in Heidelberg, in Vienna, and before that already in Paris, and thus caused the small fistula, we would have to assume that his suture particularly acts unfavorably in this regard, because, as I have shown above, such remaining defects have never been observed, either by myself or by other operators, as an obstacle to a complete cure." The patient, Chaye Kora, whom Bozeman operated on July 13th, 1875, in the clinic of Professor Karl von Braun, returned in June, 1876, to the same clinic. She could pass her urine every three to four hours spontaneously, but at the same time always lost involuntarily large quantities of urine. She had on the left side a defect, one cm. from the outer end of the cicatrix, and not quite two cm. distant from the vaginal portion of the cervix. Through this a small surgical sound could be passed, and a little clear urine could be seen passing through it from time to time. Through this fistula it was easy to pass a thin catheter towards the left kidney. Clear urine would then permanently flow through it by drops. This dribbling of clear urine even continued while the bladder was being filled with various colored fluids, as B. had demonstrated repeatedly at his clinic (Braun's); neither was it possible to demonstrate a communication of the bladder with the opening of the ureter in the vagina. It was surely a uretero-vaginal fistula. The objeetion of Prof. Simon that Bozeman's widely separated sutures included the ureter easier than the narrowly separated ones, is noteworthy, but neither Simon nor other operators ever observed this obstacle towards a complete cure, and its cause, according to B.'s view, is this, that, where there are large defects, where the upper margin and the angle are immovable, other operators have not united the borders of the fistula, but have invariably performed kolpokleisis. Simon further remarks: "It seems strange that the reporter considers the second case as a cured one, although the worst part remained open, because, according to Bozeman's and Bandl's views as well, the remaining little fistula was a vesico-uretero-vaginal fistula. But, since Bozeman, if operating for such large defects, could not avoid the visible ureter, it must be presumed that he will be less able to do so while operating for the remaining little fistula, when the ureter cannot be seen as well, or not at all."

He must acknowledge that he was wrong in considering the result of Bozeman's operation in this case as a complete cure, but the success seemed so great (of a uniting line of 5 cm. long, there remained open only 2 mm.) that B. thought that he would be pardoned for the courtesy towards Bozeman. The visible (right) opening of the ureter had been avoided by Bozeman, contrary to Simon's erroneous opinion, because the small defect remained on the left side.

When Bandl made the diagnosis of a uretero-vaginal fistula he considered how he could cure the woman. He found, by searching the literature, to his great astonishment, that of all the cases of uretero-vaginal fistulæ *not one* had been cured in a direct way. So, for instance, Landau writes: "For the purpose of a cure of a uretero-vaginal fistula heretofore a great many, but always RESULTLESS experiments were made." Simon cut down in his first case, using a catheter in the bladder, pressing it against the fistula; he changed the fistula into a transverse funnel, and closed the wound by uniting the mucous membrane of the vagina. But soon afterwards the opening in the bladder closed, and the closed vaginal walls opened. Simon then tried to cure the fistula in two acts: in the first he again opened the lower end of the ureter, and made it permeable, and tried to close the fistula by a second operation. Since this *also failed*, Simon gave up all hopes of being able to cure the patient, and he did not repeat the operation in his second case. He, however, observed later that, if he had at that time been convinced of the high value of *kolpokleisis*, he would have closed the vagina, and he therefore recommended this method for the treatment of all the cases similarly affected as the only mode of obtaining *permanent relief.*

The authors of the latest works on gynecology all agree with Simon's last recommendation. Thus, for instance, Hegar and Kaltenbach state that the defects of ureteral fistulæ can only be cured by an indirect procedure. Schroeder says: "Also in cases of uretero-vaginal fistulæ, thus far, the oblique obliteration of the vagina is the only possibility of healing them. If the vesical end of the ureter is closed, it is necessary to convert the existing defect into a vesico-uretero-vaginal fistula, and below this the vagina must be closed." Landau himself has made a proposition for the direct cure of uretero-vaginal fistulæ, at the meeting of the German Congress of Physicians in Graz. He recommends to introduce a long elastic catheter from the vagina into the upper end of the ureter—its free end through the detached ureter—and the bladder, and hence to bring it out through the urethra by the aid of a toothed forceps. The next step of the operation consists in freshening and uniting the tissue on both sides of the catheter. In order to carry out this method, the vesical end of the ureter must be present and accessible, or, as is often the case, a uretero-vaginal fistula must exist; and, if this procedure does not succeed, the operator should try to cut out of the wall of the bladder and vagina an oval piece in the direction of the lower end of the ureter, and to change the uretero-vaginal into a vesico-uretero-vaginal fistula (into the upper border of which the ureter opens), and then to unite the vesico-uretero-vaginal fistula by deep sutures that pass through the mucous membrane of the bladder. Simon himself lately again advocated the experiment to cure the uretero-vaginal fistula in a direct way, and recommends to pierce the wall of the bladder, then to introduce a sound from the bladder through this opening into the ureter, and to slit open the uretero-vaginal wall from the bladder, a distance from one to one and a half centimetres long, and to separate daily with a thick sound the margins of the slit, until cicatrization has taken place. In a second operation the vaginal fistula is to be freshened and united in the direction of its longest diameter. One could also freshen up a small portion of the adjacent fornix, together with the margins of the fistula, and use this for the purpose of closing the same. This proposition seems to lead Simon with more certainty to a satisfactory result than the one made by Landau.

Bandl wrote to Bozeman, who was at that time in Paris, where he also performed several operations, and asked his advice how to cure this woman. He answered, to divide the ureter towards the bladder, then to freshen the edges, and to unite them.

After having carefully studied everything that was known as having been tried for the cure of this affection, and the advice he had received, B. made a trial for curing a case, June 30th, 1876, using Bozeman's table and instruments. It seemed to him of real practical value to introduce a catheter into the bladder and the ureter; he therefore proceeded in accordance with Landau's proposition. He made a longitudinal incision into the vagina from the opening of the ureter towards the bladder, about two centimetres long, and next opened the bladder at the bottom of this wound, and pushed his catheter forward to the depth of about 1.5 centimetres, establishing as broad surfaces of the wound as the circumstances permitted; freshening, at the same time, the neighborhood of the opening of the ureter. The next step consisted in introducing a catheter (Charrière, No. 2) into the bladder through the opening he had made into it. A long curved pincette was then introduced into the vagina, and the point of the catheter was brought out of the bladder and introduced into the ureter; the surfaces of the wound were united by three silver sutures and small plates, in accordance with Bozeman's method. B. then introduced a second catheter into the bladder, with a view of perhaps preventing the flow of urine towards the wound and caught the urine of both kidneys separately in two vessels, for five consecutive days. That from the left kidney was clear, from the right, however, which passed through the bladder, was always somewhat bloody and turbid. The catheter was left in the ureter and bladder, and caused no pain nor any other symptoms.

On the seventh day, the sutures were removed. Some urine then escaped through the upper end of the united wound. The small opening that remained behind was cauterized several times. After four weeks, notwithstanding this procedure, the bladder was again completely closed, and the ureter opened into the vagina as before. It was now somewhat more distant from the closed bladder, because during the operation inevitably a small portion of tissue had to be lost. On the 12th of August, 1876, Bandl made a renewed effort for the purpose of a direct cure. He made a circular cut around the opening of the ureter, and carefully dissected up some tissue towards the bladder from the vagina, and established a new opening into the bladder; a catheter was then introduced into the ureter as before. In this manner he formed a very nice little groove for the same around the opening of the ureter by means of the little flap of the vagina which he had cut out. After introducing his catheter, he denuded as much as the thickness of the vagina allowed him. The cut surfaces were united with wire sutures, and the urine was again caught separately from each kidney. After three days, the patient was removed to the clinic of Professor Spaeth. Both catheters were left in without causing trouble. The patient passed her urine every three to four hours in a normal way after the removal of the sutures. What he feared most, the dying of the little flap which he had cut out of the neighborhood of the ureter, did not seem to have occurred in this case. Patient left the hospital the latter part of September *perfectly cured.*

Next follows a graphic description of Case No. II., which he also operated strictly in accordance with Bozeman's method. This woman could also retain her urine without difficulty four or five hours after the operation. The patient had been shown to the class, and also to Professor Billroth. She was perfectly cured after two weeks, and went home rejoicing.

Case III.—In this the same method (Bozeman's) had been used with success. A very small opening, however, remained behind, which, we have no hesitation in saying, will be completely cured at some future day without much difficulty. In spite of his opposition to Bozeman's direct method of operating, as stated above, in cases of uretero-vaginal and uretero-vesico-vaginal fistulæ, the late Professor Gustav Simon, of Heidelberg, shortly before his death wrote a paper entitled "A Comparison of Bozeman's Method of Operating for Vesico-vaginal Fistula with that of the author," in which he admits that by Bozeman's method of operating, a *large majority of cases of fistulæ can be cured*, and that it can be favorably compared with that advocated by Sims, Emmet, and his (Simon's) own. Bandl therefore claims to be perfectly justified, convinced also by the excellent results which he himself saw, to call the attention of his German colleagues to the excellent method practised and advocated by Bozeman. Bandl lauds especially, and considers it of the highest value in the treatment referred to, to follow Bozeman's preparatory treatment of gradual dilatation by means of which the margins of the fistula are made accessible and movable. B. states further that, having operated after Bozeman's plan, he had the good fortune to cure in fifteen months fifteen women in Professor Karl v. Braun's clinic, and two cases in his private practice. He then describes minutely these cases, giving full details as to their history and the result in each case.

Verneuil thinks the operation for fistula often dangerous. Bandl did not lose a single case, and also makes the statement that normal urine seemed to have antiseptic properties, since in none of his cases were ever septic symptoms noticed. B. T.

11. COUNTERINDICATIONS TO OVARIOTOMY. By F. HOWITZ, Copenhagen. (*Gynecological and Obstetrical Communications*, Vol. I., 1877.)

The rising interest which gynecology commands in all civilized countries has found a new expression in the foundation of a new periodical edited at Copenhagen (Denmark) by F. Howitz, M.D., under the title of *Gynecological and Obstetrical Communications*, and destined to appear twice a year. Two parts, forming the first volume, have appeared in 1877.

Whilst much in its articles is calculated for a medical public less versed in gynecological lore than that of this country, the first paper by the editor is one worthy of the careful attention of even consummate gynecologists. It is called, *Contribution to the Doctrine of Contraindications for Ovariotomy*, 46 pages.

Howitz bases his considerations on his own experience, extending over thirteen years, in which he has operated about a hundred times (eighty-eight complete, four incomplete ovariotomies, and five exploratory incisions), as well as on what he has noticed in witnessing operations performed by some of the most renowned ovariotomists.

The difficulty or the impossibility of removing the diseased ovary is chiefly due to adhesions between the cyst and the wall of the pelvis and the broad ligaments or the uterus, the bladder, and the intestines. Such adhesions are either the sequel of inflammation or depend upon the way in which the cyst has developed by separating the layers of the broad ligaments so as to be in part covered by them. The author has found this last kind of cysts five times. To a certain extent it is possible to ascertain this condition before or at the beginning of the operation. Whilst the tumor is movable in the abdomen, it is impacted in the true pelvis. The abdominal wall may be displaced over the tumor, and the tumor itself may be rocked from side to side, but not entirely displaced—a natural consequence of the broad adherent base. The uterus is pushed to one side and forward, intimately connected with the tumor, so as to follow its movements. The bladder has often been lifted up together with the uterus, and when it only contains a moderate quantity of urine, more than four ounces, it is felt above the symphysis. The urethra takes consequently a steeper course, and the meatus is drawn somewhat into the vagina. By Simon's rectal exploration, the *linea terminalis* is felt free on one side, whilst on the other the brim of the pelvis and the tumor are confounded, so that the *linea terminalis* cannot be felt. Even the history seems to throw some light on the nature of the case. There have not been symptoms of peritonitis. The patient has not suffered much, except that sometimes there is pain, edema, or tingling in one of the lower limbs, which continue during the whole development of the tumor, and are explained by the pressure exercised by the latter. Finally, it seems that this kind of tumors grows slowly (18, 7, 4 years).

When the abdomen has been opened, the anterior surface of the tumor shows a number of enormously distended veins, due to the pressure on the *plexus pampiniformis*. If we feel for the pedicle, we find that the peritoneum passes immediately from the brim of the pelvis to the tumor, and that a great part of the tumor lies below this kind of diaphragm. The uterus is not separated by any line of demarcation from the tumor. This is one of the worst complications of ovariotomy. Kaltenbach (Freiburg, Germany) is inclined to ook upon it as a contraindication for ovariotomy. Howitz thinks that we are entitled to try operation and that we have a fair chance of being able to complete it in a justifiable manner, (1) by removing part or the whole of the uterus, (2) by enucleating the tumor from its peritoneal cover (Miner), (3) by using *Paquelin's* thermocautère, and (4) by the antiseptic treatment.

1. By removing the uterus we avoid separating it from the tumor. We may either put a clamp on the narrow part of the uterus and the ligaments together, or ligate each ligament separately with *ligatures perdues*, and secure the uterus separately by a clamp or by Cintrat's *serre-nœud ligateur*.

2. By enucleating the tumor, we can get it out pretty safely. The vessels from the *plexus pampiniformis* lying in or near up to the peritoneal folds, it s possible to avoid hemorrhage from the larger vessels by ligating the folds of the peritoneum with catgut or carbolized silk, or by compressing them in a clamp.

3. The *thermocautère* is much better than the heated iron or the solution of chloride of iron for checking capillary hemorrhage. It may always be at hand; we may any moment increase or diminish its heat; its effect may be imited almost to a point; it irradiates so little heat that the surrounding parts are easily protected.

4. Howitz has employed the antiseptic treatment in his last sixteen operations and been very well satisfied with the results. The easy cases all recovered, and no patient died of septicemia. Several of the operations were tedious, and often he saw the peritoneum become white or violet in the places reached by the spray, but this never caused irritation or poisoning. The chief advantages are that larger portions of ligated tissue may be left in the peritoneal cavity; that the *toilette* of the peritoneum need not be so long and particular, and that the pedicle is slipped into the cavity, which simplifies the after-treatment considerably.

Howitz has operated in four cases with this complication; two patients recovered, two died; one of shock, the other of tetanus.

Whilst no kind of adhesions in themselves are a contraindication for ovariotomy, the *general health* may present one. If the patient has been brought very low down by a dyscrasia, suppuration, etc., ovariotomy is only warrantable if everything promises an easy and quick operation. Then it has saved ife even in desperate cases.

Cancer of the ovary usually does not form many and vascular adhesions. Generally they are of recent origin and may easily be ruptured, but it is extremely difficult to check the hemorrhage quickly. Secondly, the degeneration has often reached neighboring parts so as to hide the line of demarcation. Thus, for instance, the intestines may be opened in trying the separation. Operation is especially contraindicated if the dyscrasia be much developed, if other organs be affected, if there be great swelling of the glands, much emaciation and evident cachexia. If the diagnosis is doubtful, he advises operation or at least explorative incision.

Enormous size of the tumor augments the dangers of the operation considerably. It may be necessary to make an incision from two centimetres above the symphysis to the cardia, and the danger increases in proportion to the ength of the incision. The sudden removal of the enormous mass may cause anemia in the brain, irregularities in the action of the heart, and changes in the pressure under which the blood circulates in the lung, the liver, and the kidneys. Often adhesions are found to an extent that, even if easily separable, they constitute a dangerous vulneration. Thus the author found one occupying a square foot. But in spite of the increased danger, he does not see an absolute contraindication in such cases.*

Phthisis in its more chronic form is no contraindication. The tumor deprives the organism of a part of its material; it hinders the function of the organs when it increases in size; it weakens the patient by the intercurring inflammations of the peritoneum; it produces often fever by suppuration in its wall or contents, and it has a depressing influence on the mind of the patient. Finally, it may burst and kill her. As a rule, patients on whom ovariotomy has been performed grow exceedingly fat. This change in the nutrition may exercise a desirable influence on those affected with phthisis. Thus it is only in a very advanced stage, and when it takes a rapid course that phthisis contraindicates ovariotomy. It may even be advisable to operate a woman suffering from phthisis earlier than else, in order to remove the weakening influence of the tumor.

Organic heart-disease is a not sufficient reason for refusing a patient to deliver her from her tumor, but the danger being increased, the prognosis is less good. The tumor with its generally large veins and often numerous arteries forms, as it were, a separate circulation, augmenting the work of the heart and thereby increasing existing diseases, as hypertrophy, dilatation fatty or amyloid degeneration and valvular lesions. On the other hand, the deep narcosis is dangerous, and often the pulse after ovariotomy becomes slow as after child-birth, and sometimes intermittent. Sometimes the blood rushes with too much force into the heart and a paralysis of this organ may ensue.

Howitz has several times observed this condition and seen it relieved by venesection.

Kidney-disease, especially Bright's disease, is no contraindication for ovariotomy, unless the general health is so bad that it is likely that the patient will not be able to stand the shock of the operation. It is, in cases of chronic disease, very difficult to give a prognosis as to time, and it is our duty to try to prolong life, if even it be only for a comparatively short period. The pressure exercised by the tumor may favor the development of a degeneration of the kidneys, and consequently its removal would put a check on this development But the prognosis is less good, for it is of great importance for the resorption and elimination of the exudation taking place in most cases that the skin and kidneys function well.

Chronic liver complaint, likewise, is no contraindication except when the general health present one. The tumor will probably cause the patient even more than usual suffuring and exercises an unfavorable influence on the live disease.

Chronic organic diseases of the brain and medulla are not a contraindication unless the general condition is such as to foreshadow a near death These diseases last often many years, and we ought to give the patient the relief we can by operating. This is especially a duty if the tumor menaces to shorten her life. But, of course, the prognosis for the operation is less good

As for *insanity*, it must be remembered that it is very often due to peripheral causes, especially an irritation proceeding from the sexual organs. Thu it seems indicated to operate insane women perhaps even much earlier than others.

Fibroid of the uterus is not necessarily a contraindication. Howitz ha extirpated one of the ovaries with success in a case in which there was fibroid as large as the head of an adult. In some rare cases it may render th peration more difficult, and force the operator to make the incision in the ide instead of the *linea media*. Of late Hegar has even extirpated with sucess both ovaries in two cases in order to check the dangerous hemorrhage ccasioned by large fibroids.[1]

Whilst formerly *pregnancy* was looked upon as a contraindication, this view as been much modified of late. Small tumors are pretty often found withut interfering with pregnancy, labor, and the puerperal state. If they are arge and left alone, the patient suffers a good deal, the cyst may burst and ause general peritonitis, or the pedicle may be twisted so as to produce angrene. Sometimes the ovarian tumor presents a serious impediment uring labor, especially smaller tumors that block up the pelvis. The larger nes may interfere with the pains, and alter the situation of the uterus.

Even tumors as large as a child's head may be present without essentially indering the development of pregnancy, labor, and the puerperal state, but nder the latter they generally grow rapidly. Tumors as large as the head f an adult require surgical treatment. If the contents are fluid and not too hick, they may be emptied by tapping. If the tumors are solid, or cannot be mptied, artificial labor may be induced, if we will not let the woman go on ill abortion supervenes by itself, or we may resort to ovariotomy. During he first three months of utero-gestation, before the formation of the placenta, here is a great tendency to abortion, and if any operation is performed on he genitals during this period, not only abortion is likely to occur, but often erious and fatal puerperal diseases are apt to follow. After the end of the hird month, there is less danger of abortion. The author cites the good esults obtained by Spencer Wells in ovariotomy performed on pregnant vomen. He sums up by saying that in many cases pregnancy is no contrainlication, since the child may be saved, and the mother not exposed to more langer than by a later ovariotomy, whilst she is sheltered from the dangers of upture or gangrene of the cyst.

Chronic peritonitis is not a contraindication. Often it is due to the tumor tself, which causes exudation in the peritoneal cavity, or a series of circumcribed adhesive inflammations, or a more acute peritonitis passing into a nore chronic form, *e. g.*, by the rupture of smaller cysts gradually emptying heir contents through valvular openings. In other instances, we find the eritoneum much thickened, which even gives a better prognosis for the peration. But when there is a *subacute* peritonitis, *e. g.*, after tapping, or upture of small cysts (a condition characterized by some tenderness of the bdomen, a temperature of 101–103°, a pulse not much above 100, nausea, ostiveness, a red and somewhat dry tongue, and want of appetite), we ought ot to operate, because it gives rise to acute peritonitis. In such cases it is roper to postpone the operation, give tonics, and derivate to the skin and idneys. In the really chronic peritonitis the opening of the peritoneal cavity nd emptying of the contents has even been recommended and practised vith success by the author as well as by Sp. Wells and others.

As *temporary* contraindications may generally be regarded acute diseases, uch as pneumonia, pleuritis, peritonitis, eruptive fevers, etc., or serious njuries. But sometimes imminent danger is due to the ovarian tumor tself, as when acute peritonitis is produced by the rupture of the cyst. In uch cases it is the duty of the surgeon to offer the patient the chance of an peration.

Finally Howitz remarks that, in restricting the contraindications very much, he speaks only of the absolute contraindications or conditions in which ovariotomy is not justifiable. It is another question whether certain cases do not present a relative contraindication, that is to say, it may be asked whether another treatment is not preferable, especially injections of iodine—a question which he reserves for another paper.

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[1] Likewise Dr. Trenholme of Montreal (Gynecological Transactions, ii)

In discussing the contraindications of ovariotomy, Dr. Howitz has had especially in view the principles laid down by Spencer Wells (Diseases of the Ovaries, London, 1872, p. 319) and Peaslee (Ovarian Tumors, New York, 1872, p. 388).

Howitz has modified Simon's excision of *hypertrophied cervix*. After having made the bilateral incision with Küchenmeister's scissors, he makes two incisions in each lip, beginning a few millimetres from the lateral incisions and converging in the tissue of the lip to the depth of a centimetre, cutting a semilunar piece out of each lip. This is called the *oval* or better the *crescent-formed excision*. The wound is closed by five silver sutures in each lip.

In this and other operations Howitz uses a *retractor*, formed of thick copper wire, both ends of which are fastened to a handle, thus forming a loop that may be made wider or narrower and can be put at whatever angle the surgeon wants—advantages not found in Simon's side spatulas.

Massage is used with good results in Howitz's clinic for obtaining the resorption of non-purulent exudations left behind by parametritis. The tumor is fixed by a finger in the vagina and pressed against the anterior wall of the abdomen (unless the exudation is seated in the iliac fossa, when the bone offers a solid underlayer). The skin having been anointed, moderate friction is exercised by the points of the fingers of the other hand. This procedure is at first painful and is repeated every two days, in the beginning during five, later during ten minutes. The patient shall be kept in bed a few hours after every sitting. The presence of pus is a contraindication. Absence of fluctuation is not enough to diagnosticate this, but the general health and especially the absence of fever, which is to be ascertained by the frequent use of the thermometer, are reliable.

Dr. A. Holstein diagnosticated an *obturator hernia* by bimanul examination. The patient was 66 years old. The skin and the superficial fascia having been incised, one index was introduced through the wound and the other placed in the vagina on the region of the *foramen obturatorium*. In this way an elastic tumor was felt coming out from the upper part of the aperture. After division of the *fascia lata*, the *pectineus muscle*, and the *fascia subpectinea* the tumor came in view, resting on the adductors, as a hernial *sac* the size of a pigeon-egg, the neck of which dived through the *canalis obturatorius* into the pelvis. This sack was slit open and thus a lump of omentum, and underneath it a small, dark-colored, but resplendent coil of intestine were brought to light. The obturator artery was felt on the outside of the neck of the hernial sack. Therefore the place of incarceration was dilated by small incisions upwards and inwards. A couple of small arteries had to be ligated in the beginning of the operation. Else there was no hemorrhage. The operation and after-treatment were antiseptic. The patient rallied, the pain ceased, the temperature became normal, but the strength diminished and the patient died from collapse three days after the operation. The *post-mortem* examination showed no peritonitis. The formerly strangulated portion was one inch and a half of the ileum. H. J. G.[1]

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[1] HENRY J. GARRIGUES, Brooklyn, accidentally omitted from list of contributors to this department.—ED.

THE HYDROTHERAPEUTIC AND METALLOTHERAPEUTIC TREATMENT OF HYSTERO-EPILEPSY.

DR. L. GRELLETZ summarizes (*Le Mouvement Médical*, 1878, No. 1) me of Professor Charcot's recent communications upon this sub- ct. The uselessness of castoreum, assafetida, bromide of potassium, etc., undeniable, the impotence of the latter drug, in particular, being but other proof of the difference between this disease and epilepsy proper.

When called to a case of hystero-epilepsy, M. Charcot cuts short the parox- m by compression of one or both ovaries, thus profoundly impressing the standers and the patient herself, who shows that she has been mastered. he astonishment, mingled with admiration, which the family are apt to feel r the patient's wonderful doings and sayings often renders it necessary to insfer her to an institution, where the attendants are indifferent to her antics, d where hydrotherapeutics may be employed with benefit to both body and ind. On the slightest sign of a paroxysm, by day or night, however little citement there may be, she should be put under the douche. The circular uche, being very disagreeable, will get the better of her caprices and evil linations; moreover, the visits of friends should be allowed only when the tient shows herself docile and reasonable. These measures alone sometimes cceed in very marked cases, the most rebellious to all internal medication. Metallotherapy may aid the cold-water cure, and of itself it produces aston- ing results; few in number thus far, but very encouraging. It consists iefly in the application of metals, such as coins, to the anesthetic parts. old, copper, and zinc are those most used. Several trials are sometimes cessary, in order to ascertain what metal is capable of affecting the patient, d there are some who resist all known metals. Take the case of a hemian- hetic susceptible to the action of gold. The proceeding is absolutely the me with any other metal. After an application varying from five to ten or teen minutes, sensation returns to a very appreciable extent, especially in rts above the point to which the metal was aplied. Patients whose arms or nds could have been transfixed without their knowledge, soon begin to feel slightest touch. This improvement may persist for several hours or days the metal be removed, but the anesthesia reappears if it be left in place. curious fact has recently been observed, that this amelioration is obtained ly at the expense of a temporary analgesia of a point on the opposite side of body corresponding to that upon which the metal was applied—a very eresting compensatory transfer taking place.

In all hysterical hemianesthetics the eye is more or less affected. A special m of amblyopia is produced, the features of which are color-blindness and a rrowing of the field of vision. The ophthalmoscope reveals no signs of this aurosis; it is a purely cerebral phenomenon—an additional proof of disturb- ce of the brain in hysteria. The achromatopia is seldom complete, but may limited to the loss of certain colors. Some patients can no longer distin- ish violet, green, red, or yellow; blue comes last in order, the perception this color often remaining when that of all others has been lost, and being ays the first to return when the color-blindness has been complete. The ler in which colors appear and disappear differs from that of the spectrum. w, on applying the metal selected to the temple of the anesthetic side alagous phenomena are obtained with those produced upon an anesthetic b; after a few minutes' application the patient begins gradually to recognize ors, and that, too, in a perfect order, always the same in all patients, in vate or hospital practice, which forbids the idea of any imposture. If the metal be removed when the ability to distinguish colors has again become complete, the ability persists, and, by repeating the applications often enough, we may wholly do away with the derangements of vision, just as we may overcome the hemianesthesia. If the metal be kept applied, the benefit will be lost, and the distinction of colors will disappear in inverse order.

These external applications, which are of but secondary importance in metallotherapeutics, lead to the subsequent internal use of the metal indicated. If gold has been selected, we may give the drops of a solution of gold and sodium (of the strength of a centigramme to twenty-five drops) in distilled water, before a meal. After taking the gold, the patient speedily feels a voracious appetite, followed, after a certain length of time, by a slight heaviness and lassitude, which indicates that the internal treatment must be suspended, although it may subsequently be resumed. If copper have been chosen, give a solution of acetate of copper ; if zinc, sulphate of zinc, etc.

In regard to the external applications, the question is one of surface merely : the plate need not be thick. By a combination of these internal and external proceedings, M. Burcq has succeeded in materially modifying, in the course of three or four months, four very marked and inveterate cases of hystero-epilepsy. Two of them may even be considered as cured. The patient may be considered as free from the hysterical diathesis as soon as she remains insensible to the prolonged application of the metals which previously affected her ; but she must be looked upon as still subject to it if there be hebetude, somnolence, analgesia, or achromatopia. F. P. F.

13. Oöphoritis.

In a review of Dr. Pierre Merlou's recent work, De l'ovarite aiguë (*Le Mouvement Médical*, 1877, No. 52), M. **Andre Martin** gives the following picture of oöphoritis. It generally assumes the subacute form, with a slow, intermittent, progressive course. The first symptoms appear a little before, during, or after menstruation. The flow is either arrested or increased and immoderately prolonged, and there is acute pain, increased on pressure, at the middle of a line extending from the symphysis pubis to the anterior superior spine of the ilium. These two leading phenomena are mitigated during the inter-menstrual period, to reappear, sometimes with greater intensity, in succeeding months. Constitutional symptoms now show themselves ; disorders of the digestive functions ; a marked change in the character ; general malaise and inaptitude for any fatiguing occupation, walking, etc. Sometimes there has been a little fever from the beginning, which in some cases recurs, accompanied with bilious vomiting, with each fresh attack, *i. e.*, at every menstruation. If the disease be not arrested in its course, it passes into a chronic state, becomes complicated with peritonitis, and then, most frequently, suppuration, with all its consequences, becomes manifest in the diseased ovary. Leaving out of account the frankly inflammatory oöphoritis, puerperal oöphoritis which quickly and surely leads on to a fatal termination, the subacute form is the one which we have most frequent occasion to observe, and the one which most commonly occasions errors in diagnosis. Its intermittent course is definite enough and characteristic enough to remain impressed upon the memory, when once the opportunity has occurred of observing it closely ; but the diagnosis can only be confirmed by the physical signs, which, when well ascertained, allow us to exclude absolutely all affections simulating oöphoritis.

On palpation, a little resistance is felt, with some heat, and by depressing the abdominal wall deeply, so as to bury the fingers in the iliac fossa, verging upon the superior strait, we are able to feel a small tumor formed by the inflamed ovary; this sign is not constant, for the inflamed ovary generally tends to fall into the utero-rectal cul-de-sac, but acute pain is always elicited. The vagina is ordinarily somewhat hot, and there is more or less leucorrhea. In one or the other of the lateral culs-de-sac the finger encounters a certain degree of resistance, and then, on carrying it as high as possible, it reaches a little tumor, more or less movable, the slightest touch of which causes such pain as to make the patient cry out. The uterus is free from adhesions, unless there be at the same time an attack of pelvic peritonitis, and, on drawing it away from the locality of the little tumor, the same pain is produced. By the recto-vaginal touch we may grasp with the two fingers a smooth, roundish body, as large as a cherry, producing exquisite pain. These two physical signs are characteristic of subacute oöphoritis, for neither simple morbid congestion of the ovary, nor oöphoralgia, nor retro-uterine hematocele, nor metritis, nor lymphadenitis, nor perimetric phlegmon will give the phenomenon of pain so well marked and so precisely localized. F. P. F.

14. THE PATHOGENY OF MEMBRANOUS DYSMENORRHEA.

DR. V. GAUTIER, of Geneva, draws a parallel (*Annales de Gynécologie*. Dec., 1877) between membranous dysmenorrhea and an affection of the tongue which has been called psoriasis, but which he prefers to call ichthyosis. Uterine ichthyosis is not necessarily due to inflammation, although it may be occasioned by it. It does not in itself give rise to dysmenorrhea; that effect being produced by a concomitant stenosis of the uterine canal. The exfoliation is incurable, and hence treatment should be limited to measures which tend to restore the normal calibre of the canal. F. P. F.

15. THE CAUSES OF STERILITY.

In a paper read before the Gesellschaft für Natur- und Heilkunde in Dresden, October 20th, 1877 (*Med.-Chir. Rundschau. Dec.*, 1877), Dr. F. WINCKEL alludes to the infrequency of opportunities for studying post mortem the majority of the abnormalities which give rise to sterility, and the uncertainty whether, and to what extent, ascertained lesions in the living subject tend to cause sterility. We know, to be sure, that vaginismus, as well as atresiæ of the genital canal, impede the intromission of spermatozoa, but we cannot be sure that impregnation, following the dilatation of a contracted os uteri, is the result of treatment, for the semen is capable of penetrating, not only the smallest openings in the vagina or the hymen, but also the still more minute uterine mouths of the tubes. Marion Sims' famous case of conception following the injection of semen ino the uterus with a syringe is not at all conclusive, for cohabitation was continued before and after the injections, so that no one can positively assert that only the injected spermatozoa, and none others, reached the ovule, especially as the uterus had previously been brought by means of a pessary into a posture more favorable to conception; and because, in a great many cases, women who have been sterile for years, at last conceive. There is but one way of clearing up these uncertainties—post-mortem examinations of the entire genital apparatus in women who have not died of diseases of the sexual organs. Even in this way we cannot discover all the causes of sterility, for such affections as vaginismus and membranous and neuralgic dysmenorrhea leave no marks.

The author makes use of 150 autopsies of women who died between the ages of fifteen and fifty years. The causes of sterility may be divided into (1) those which mechanically hinder the progress of the semen to the ovule, or that of the ovule to the semen, (2) those which chemically damage the semen or the ovule, and (3) those which interfere with the production of ova or cause those already formed to perish—nutritive changes in the ovaries. These three groups may coexist in manifold conbinations; for example, an ulcerated epithelioma of the cervix may operate mechanically by occluding the os internum and fixing the uterus, as well as chemically by its deleterions action upon the semen and the ovule. The large carcinomatous growths occasionally found during pregnancy are generally the result of the heightened afflux of juices consequent upon pregnancy, conception having taken place at a time when the neoplasm was yet nascent. So, also, many nutritive affections of the ovaries prove a mechanical hindrance to ovulation, the thickening of the follicular walls preventing their dehiscence.

Among the 150 autopsies, acquired atresia of the vagina was found in one subject, a woman who had born children before the atresia took place. Atresia of the os internum, with closure and cystic dilatation of the right Fallopian tube and other lesions, was found in one case. Atresia of both tubes was found in nine persons, only three of whom had born children. In three of these nine cases both ovaries were so imbedded in adhesions as apparently to make the escape of an ovule utterly impossible. A narrowing of the genital canal sufficient to prevent the passage of the uterine sound does not necessarily preclude impregnation. An instance is given in which the author had performed transverse obliteration of the vagina for a large vesico-vaginal fistula, leaving an opening scarcely as large as a pea; and yet pregnancy afterwards took place, the spermatozoa passing through both this opening and the urinary receptacle. Stenosis of either os is a cause of sterility only when there is also a follicular cervical endometritis—the resulting cysts so impeding the egress of the secretion poured out by the follicles which still remain open, that it distends the cervical canal more and more, and may constitute an insurmountable barrier to the spermatozoa. Hence stenosis accompanied by follicular inflammation should not hastily be treated with dilatation or incision, but rather with small carbolized sponge tents, with subsequent applications of tannin, etc. Stenosis caused by flexure is not in itself enough to account for the sterility which is so frequently met with in such cases, but the latter may be due to uterine catarrh or affections of the uterine appendages.

Enlarged follicles of the cervical and corporeal mucous membrane were found alone in fifteen cases, and associated with more or less numerous adhesions about the uterus, tubes, and ovaries, in seven more cases. In all these cases the uterine canal was more or less pervious, and the sterility should be attributed to complications.

Myomata are doubtless often the cause of sterility, although the connection is difficult to prove, and, vice versâ, the muscular hyperplasia may be the result of sterility. Out of 34 cases (in 300 autopsies), two were complicated with anteflexion, two with retroversion, two with retroflexion, one with incomplete prolapsus, three with enlarged follicles, four with polypoid adenomata, and several with ovarian tumors, but by far the commonest complication was adhesion of the uterus to neighboring organs (found in 21 cases). Small, intraparietal myomata, which, by the distention caused by their progressive growth, may make the uterus excessively hyperesthetic, not infrequently give rise to a condition quite like vaginismus, rendering cohabitation almost absolutely impossible. Under this head, it is certain, belong many cases which are looked upon as neuralgic dysmenorrhea. The larger ones distort the cavity, and cause catarrhal affections and mucous hyperplasia, which may act both mechanically and chemically. Small ones may do this also, if seated near the orifices of the tubes. These tumors, large or small, very often occasion perimetritis, perisalpingitis, or perioöphoritis, which, partly by abnormal fixations of the uterus, partly by closure and prolapse (Vorlagerung) of the tubes and ovaries, may prevent the exit of the ovule and the access of the semen. If a myoma become pediculated, and strangulation and gangrene ensue, an acrid, putrid discharge will, as in carcinoma, persist for a long time, and may kill the spermatozoa.

Impermeability of the Fallopian tubes was found very frequently, the tubes being generally closely adherent to the ovaries. The mobility of the tube is impeded by adhesions, although it may still be capable of grasping and conducting an ovule. In three cases, conception was rendered quite impossible by numerous adhesions between the tubes, ovaries, uterus, and rectum. Tuberculosis of the tubes was found in three persons who had died of pulmonary tuberculosis. Altogether, there were fifteen cases of sterility from abnormalities of the tubes. The adhesive inflammation, which gradually leads to these conditions, doubtless proceeds in general from the ovary, following the rupture of the follicle in menstruation. The tube, closely pressed against the ovary by excessive fullness of the vessels, becomes sealed at its fimbriated extremity; the succeeding menstrual congestion occasions a renewed tension, a new traumatic surface, and fresh agglutination, and finally the ovary and the fimbriated extremity form an inseparable tumor, overlaid by the thickest filamentous, band-like and membranous adhesions, in which the ovarian parenchyma can often be recognized only upon section, and then, too, only in microscopic sections. Perisalpingitis and perioöphoritis thus act in concert. Finally, under these circumstances, thickening of the ovarian capsule renders the shedding of an ovule into the tube no longer possible. These patients gradually become sterile, often without any marked menstrual derangements, particularly without any pronounced symptoms of peritonitis, and tell us that nothing has ever been the matter with them. Moreover, nutritive disorders of the ovaries may cause sterility by interfering with the development of follicles, or by destroying ovules already formed. Foremost among these diseases is the formation of cystic tumors, if both ovaries be affected. This was observed in two cases. A case published by Holst shows, however, that ovulation may still take place with tumors of both ovaries, even if malignant, and therefore that conception may occur, provided the uterus and tubes be still pervious. In thirty cases, cysts of one ovary were found. F. P. F.

PEDIATRICS.

16. Etiology of Spina Bifida. (*Pediatric Section, German Congress of Phys.*, Sept., 1877.)

Prof. Dr. G. Ranke reported from the Munich Poliklinik five cases of spina bifida lumbalis, without complication with hydrocephalus or hydrorachis interna, four of which had died, while the fifth still lives.

One case was interesting, from the fact that four successive times after aspiration of the sack, the child each time fell into a deep sleep (decreased intracranial pressure ?). Each time the sack completely refilled in about twelve hours, from which Prof. R. concludes that the arachnoid is a membrane of great secreting capability, and that by the cerebral fluid great pressure may be exercised on the cranium and spinal column. In consequence of this, wherever there is lack of osseous or strong membranous support, a pressing out of the membrane and the formation of sacks occurs.

The autopsies in three of the fatal cases showed the cord to be lengthened, so that it reached to the last sacral vertebra, and to be here closely adherent to the sack walls, the posterior roots of the sacral nerves extending abruptly upward to the intervertebral opening.

Prof. R. believes the cord to have become adherent to the outer skin during the first months of fetal life, that, being bound down here, it could not retract as the bony growth advanced, and the closing of the vertebral arches being thus prevented, the membranes and skin yielded to the intravertebral fluid pressure. He therefore concludes that "spina bifida lumbalis and lumbosacralis simplex depends upon adhesion of the spinal cord to the outer skin in the first months of fetal development, the non-closure of the lumbar and sacral arches being the necessary consequence of this." This cause has been mentioned by Cruveilhier and others, but given up in later works on account of Virchow's statement, misquoting Cruveilhier, that adhesion to the amnion is a rare cause.

The fourth autopsy showed adermie of the lumbar region, and the case might probably be traced to an adhesion of the amnion. The fifth case, still living, agrees with the first three. J. F.

17. Inoculation of Syphilis by Vaccination. (*Ibid.*)

Dr. v. Rineker remarked that the blood theory of Viennois was untenable. There is no experimental or clinical proof that syphilis can be transmitted by a mixture of vaccine virus with the blood of a person infected with syphilis. In fact, direct experiments seem to deny the possibility of this. Moreover, it is contrary to the laws of syphilitic contagion that a healthy child, within eight or ten days after inoculation with syphilitic vaccine, should become so impregnated that not only its lymph, but also its blood should be capable of transmitting syphilis.

This theory being untenable, Gamberini, Auspitz, Koebner, and others have declared that inoculation with syphilis by vaccination can only take place when a syphilitic ulcer underlies the vaccine pustule, from which the matter is taken, but no one has seen or felt such an ulcer.

v. Rinecker had the opportunity of vaccinating the child of syphilitic parents, and carefully examining the case. Till the eighth day he observed a classical Jenner's vesicle, but from then on, the development of a Hunterian chancre was so characteristically marked, that it could be clinically demonstrated. J. F.

18. The Use of Salicylic Acid in Childhood. (*Cent. Zeitg. f. Kindhkde., Nos. 2 and* 3.)

Prof. Dr. Abelin (Stockholm) speaks strongly against the use of salicylic acid for children in their earlier years. After careful trial during two years, he has come to the decided opinion that "salicylic acid used in the intestinal catarrhs of children exercises no effect whatever, further than possibly to modify the stench of the feces—that, used externally in the form of ointment or powder in the treatment of atonic wounds or obstinate eczema of the face or head, it is no better than many other remedies, and that it has proved to be without effect in the treatment of true diphtheritis, as well as of scarlatinous angina."

Induced by the declarations of Buss, he determined to give the acid in the same doses in which he had given quinine to young children without evil effect, namely, single large doses of about 12 grains. He also followed Buss' directions to give it in solution and in 3 or 4 spoonfuls a few moments apart.

Several cases are given in detail. In one of chronic intestinal catarrh with furunculosis, etc., death occurred two days after the first dose of the acid, but the post-mortem examination showed nothing which could be attributed to the action of the drug. In another case, however, in which the acid was given to reduce the high temperature (104.2° F.), due, apparently, to suppurating vaccine pustules, the remedy appeared to have a caustic, poisonous effect.

Soon after taking it, the mouth and throat appeared as if cauterized with lapis; the throat was filled with foamy mucus; respiration was difficult and rattling; temperature, 99° F.; pulse, small, irregular, about 160; extremities cold, etc. After ten hours of active stimulating treatment, improvement set in; but inability to swallow, restlessness, etc., continued for two days, when the deposit on the tongue and fauces began to separate and the child nursed a little. The urine contained at this time some albumen, which, on the sixth day, was much increased, and hyaline cylinders, etc., found. There were also signs of pneumonitis of right lung.

During the next six days the child sank gradually; the pneumonitis spread to both lungs; the inability to swallow remained; but each act of deglutition caused an attack of coughing, and on the twelfth day the child died.

The autopsy showed the membranes of mouth, esophagus, stomach, and intestines to be normal. The lungs were anteriorly emphysematous, but posteriorly consolidated. Pleura, heart, liver, and spleen were normal; kidneys enlarged—cortical portion pale; pyramids hyperemic and showing spots of extravasation. Dr. Abelin considers this a clear case of acute poisoning from salicylic acid given in the dose of about 12 grs. *in powder*. It caused cauterization of the mouth, throat, and, probably, esophagus, general collapse, and a circulatory disturbance, which gave rise to hemorrhages in the kidneys and pneumonitis in the lungs. He admits the *possibility* of the previous existence of the pneumonitis at the commencement of the high temperature, but does not believe it to have been present. He considers all the symptoms as the effects of the medicine.

He also gives a case which seems to show that salicylic acid, even in small doses frequently repeated, may cause albuminuria.

He has tried the drug in cases of pneumonitis, pleuritis, typhoid fever, etc., and concludes that in large doses it is dangerous, and in small ones its only good effect is a slight and temporary lowering of temperature, which can be as well gained by other means.

He speaks more favorably of the salicylate of soda. It is better borne, and has a tolerably sure, though temporary antipyretic effect. In a case of chorea minor of *rheumatic origin*, it seemed to act rapidly and effectively. J. F.

19. Foreign Body in the Bladder of a small Girl. (*Cent. Zeitg. f. Kindhkd.*, No. 6.)

Dr. Zielewicz (Posen) relates an interesting case of the above not very common occurrence—so rare, indeed, that among 258 cases in children, Denuce only found 5 in girls under 14 years.

The patient, a girl of 10 years, presented herself with the symptoms of cystitis. An incomplete examination at the clinic showed nothing abnormal, and only a little chlorate of potash was given. Shortly afterwards, patient being taken into the hospital, a more careful examination showed, fast wedged in and to be felt in both vagina and urethra, a sharp wire, which the history finally disclosed was a hairpin which the girl had put into the urethra nine months before. Under chloroform, one point was found to project into the vagina, and the other could be pushed so far back in the urethra that the bladder could be examined with a metal catheter. It was full of incrustations, some of considerable size.

The hairpin was drawn out by forceps, considerable force being necessary, so that it was completely straightened, when it measured 6¾ inches. The incrustations were removed by means of dilatation of the urethra by Simon's specula, the meatus being incised and the larger stones crushed. 108 grains were thus removed. Now, six weeks after the operation, incontinence continues, but is improving under the induced current.

Dr. Z. remarks that spontaneous discharge of foreign bodies from the bladder is very rare. Denuce reports only 31 such cases out of 440. In this case, the hairpin would at length have ulcerated through, but with considerable slough of the vaginal wall.

In regard to the dilatation of the urethra in female children, he thinks the English method of rapid dilatation more likely to cause incontinence, which may be avoided by the use of Simon's dilators—though, when the meatus must be cut for the use of even the smallest of these, the danger still exists. J. F.

20. Lymphadenitis Retropharyngealis and its relation to Idiopathic Retropharyngeal Abscesses in Children. (*Cent. Zeitg. f. Kindhkd.* No. 5.)

Dr. E. Kormann (Coburg), after speaking of Bokai's excellent work on the above subject and the article by Schmitz in the *Jahrb.*, 1876, gives the results of his own careful examinations, conducted since September, 1873.

Examining by depressing the tongue with a spatula and feeling with the forefinger from just behind each tonsil to the middle line, one acquires such dexterity from practice that the children are scarcely disturbed. The glandular swellings are found varying in size from a pin's head to a bean, and situated behind both tonsils, more seldom toward the middle line, rarely directly in it. Bokai noticed the same situations of abscesses.

Dr. K. remarks that, if one examines in all cases of nasal or pharyngeal catarrh, acute diseases of the mouth, etc., and all troubles accompanied by difficult deglutition, one is astonished at the frequency of lymphadenitis retropharyngealis. Out of 211 cases of soör (stomato-mykosis), stomatitis catarrhalis and ulcerosa, ozena and pharyngitis chronica, inflammations of the ear passages, pharyngitis in scarlatina or measles, and diphtheritis faucium, he found 193 cases of lymphadenitis. Of these only one ended in abscess. Of 15 cases of syphilis and 2 of mercurialism in adults, all had swelling of the retropharyngeal glands. He also had a case in an adult of abscess from chronic pharyngitis with much cough. He concludes, therefore, that it exists much more frequently than has been supposed even by Bokai, and that the tendency is always to resolution—only one abscess out of 193 cases.

He does not agree with Bokai in separating secondary from idiopathic abscesses. He considers them all secondary, even the traumatic form, arising from wounds of the membrane covering the glands, and in which the lymphatics originate. He would say "all retropharyngeal abscesses are secondary, but, if we call an abscess arising from a preceding simple lymphadenitis idiopathic, we can then make three forms, idiopathic, traumatic, and an abscess arising from burrowing pus—as in spondilitis cervicalis."

Bokai gives scrofula as the principal cause, but in Dr. K.'s cases the causes were very various, being, in general, inflammatory affections of the mouth and neighboring parts.

The first case of abscess was in a boy of 4½ years. It originated from chronic scrofulous nasal catarrh. Patient was at first restless, then sleepy and stupid. About six days after the first examination, he had two attacks of suffocation, and the abscess was opened with instant relief, the patient immediately after asking for and taking food. For a few days the abscess was emptied each day by the finger, and in five days all traces of it had disappeared. Afterward two glands of the neck suppurated, and this was followed by obstinate eczema of the head, etc., which did not yield until the patient had change of air. The second case was in an adult, and likewise ran a favorable course. Dr. K. concludes:—

1. Swelled and inflamed retropharyngeal glands are frequently found in diseases of the nose, throat, ear, mouth, etc. As particular causes may be mentioned, chronic inflammations in scrofulous children, and the acute infectious diseases (diphtheria, measles, scarlatina, soör, syphilis).
2. All retropharyngeal abscesses are secondary, the idiopathic to lymphadenitis, the traumatic to the wound of the membrane, the deep abscess to caries of the vertebra. The adenitis is also secondary to the diseases of the membrane.
3. Retropharyngeal abscesses are not limited to childhood, though rare in adults.
4. Of 193 cases of lymphadenitis retropharyngealis in children, I observed only one (idiopathic) retropharyngeal abscess." J. F.

21. ACTION OF QUININE ON THE FETUS IN UTERO AND ON THE INFANT AT THE BREAST. (*Jour. de Médicine et de Chirurgie*, Oct., 1877.)

DR. BURDELL shows from statistics that pregnant women, when attacked with intermittent fever, abort seven times out of ten if they do not take quinine. Although the remedy has been considered the cause of abortion by some, Dr. B. states that he has given enormous doses without injuring the child or interrupting the course of pregnancy. He states that intermittent fever never extends to the child in utero—he has never seen a child born with the fever, no matter how severely the mother may have suffered from it.

Further, he studied the effect of the milk of women under treatment with quinine, and found that children were injured by it, and had even died from it. He found that the milk contained more quinine when the drug was given on an empty stomach. In such cases it is injurious to the child. When given with food, it appears in less quantity in the milk, which is therefore less injurious. The older the child, the better it resists the action of the cinchonized milk, and after the fifth or sixth month it has complete immunity.

If we must give quinine to a newly delivered woman, it should be given in the midst of a meal or mixed with food, and the child should not be allowed to nurse for at least three hours afterward. J. F.

REVIEWS AND NOTICES OF BOOKS.

THE TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Vol. II. Illustrated by 12 Chromo-lithographic and 2 Heliotype Plates and numerous Woodcuts. Boston: Houghton, Osgood & Co.; pp. 650, 1878.

At last the long-expected volume has appeared. The enthusiasm with which we were once prepared to receive the good things contained in it has, however, to a considerable extent evaporated; and like a long-expected and nearly forgotten visitor, it loses half its welcome. Why it should take over a year to publish the Transactions, which, according to a law of the Society, must be delivered to the Secretary, prepared for the printer, at the close of the meeting, is a question which we hope not to be compelled to repeat.

If the Society wishes to make a pecuniary success, they must so arrange matters that the Transactions may be in the market before the desire for them created by accounts of the meeting has passed away, and before the articles get stale. No author likes to wait a whole year, after writing an article, before seeing it in print, and we cannot but think that a continuance of this delay will materially interfere with the future contribution of papers to these Transactions.

Now, having blamed, we will proceed to bestow the praise which this volume fully deserves. As it is one-half larger, so also is it even richer than Vol. I. While we miss the names of Barnes, Thomas, Peaslee, and Noeggerath from the list of contributors, still there are new names to take their places, and these gentlemen, except Barnes, appear prominently in the discussions. The illustrations are good, and the chromo-lithographs accompanying Dr. Dalton's paper are simply magnificent, and do honor to American art.

As many of the papers have been presented to the readers of this JOURNAL already in abstract, we shall mention principally those which, having been read only by title, are presented to the public now for the first time.

The *Annual Address* by the President, DR. BARKER, treats of *Medical Gynecology*, urging the necessity of studying the medical treatment of uterine disease, and not allowing the more brilliant surgical results to occupy too much of our attention. His views are worthy of careful consideration. DR. CHADWICK treats of the functions of the *Anal Sphincters.* DR. JOHN BYRNE discourses of the indications and advantages of the *galvano-cautery as a means of removing the cervix uteri.* He argues strongly in favor of the operation which, in his hands, has rarely been followed by unpleasant[1] results. DR. DALTON's report on the *Corpus Luteum* is marked by his usual clear and careful style. Professor SPIEGELBERG, of Breslau, contributes a very valuable article on *Puerperal Eclampsia.* He holds that "true eclampsia depends upon uremic poisoning, in consequence of deficient renal secretion," dependent upon kidney disease of some kind. "Cases of eclampsia without albuminuria form a separate class. They are acute epileptic attacks." In the way of treatment, he gives the first place to venesection. This is to be followed by chloroform, aided in its action by morphia or chloral.

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[1] For exception see the Appendix.

We would venture to suggest that the use of the metric system in this and other articles, without the equivalent in the old style being given, will cause a great deal of dissatisfaction. The profession at large is not yet educated up to the point where the metric system can be used alone. Placing them side by side will hasten this result; trying to force the new only creates discontent.

Dr. Skene elaborates more fully his idea of using *Sims' speculum in obstetric operations.* The idea is a good one, and should be generally adopted.

Dr. Lusk shows the necessity, by a number of cases, for *caution in the employment of chloroform in labor.* The paper which seems to have excited the most interest at the meeting, judging from the length of the discussion, is that by Dr. Van de Warker on the *Intra-Uterine Stem.* Dr. V. advocates its use, but he seems to stand alone, as all the gentlemen who took part in this very lengthy and interesting discussion gave, at the most, a very qualified approval to this plan of treatment. This discussion will repay careful study by every one who treats uterine disease. Dr. Goodell reports a case of *Vaginal Ovariotomy,* and Dr. Battey considers, in a very impartial way, the question as to whether there is a *proper field for Battey's operation.* The papers by Drs. H. P. C. Wilson, Parrin, and Atlee are such as might be expected from these gentlemen. In the discussion on Dr. Atlee's paper on *Sarcoma of the Ovaries,* we would like to ask Dr. Engelmann what he means by saying that "Sarcoma, as now understood, is generally non-malignant." Do not *most* of these return after removal, infect neighboring tissues, form metastatic tumors, and kill their unfortunate victims? If so, are they not malignant?

Dr. P. F. Munde contributes a most timely and interesting article on *Electrolysis in the Treatment of Ovarian Tumors.* With the view of establishing the actual curative value of this treatment, hitherto undetermined, he collected all the cases on record (published and unpublished), 51 in number, in which it was employed (giving the cases in detail), and draws therefrom the conclusion that, as compared with ovariotomy, the results of oöphoro-electrolysis are not favorable to the latter method, either as regards certainty of cure or freedom from danger; for out of these 51 cases, 25 are reported cured,[1] and 3 permanently improved, in 13 cases peritonitis followed the electro-puncture, and of these 9 died, a percentage of 25.4 injurious results, decidedly higher than that following recent ovariotomies (9 per cent, Sp. Wells), not to speak of the cure after electrolysis always remaining doubtful, so long as a vestige of the tumor is retained from which a new growth may develop.

Dr. Emmet, from his rich experience, contributes nine cases of *Congenital Absence or Accidental Atresia of the Vagina,* and relates his method of operating in each case. Dr. Engelmann contributes a *Preliminary Report on the Uterine Mucous Membrane,* also a paper on *The Hystero-Neuroses,* a name which he applies to certain nervous phenomena, or rather series of phenomena, which are dependent on uterine disease. The hystero-neuroses of the brain, eye, pharynx, larynx, breasts, and so on, are treated of, but particular attention is given to the stomach. This paper covers a field which has been very little worked, and contains much of interest Dr. Kimball gives some *Cases Illustrating Important Points connected with Ovariotomy.*

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[1] All three of Dr. Cutter's cases of reported cure have since proved failures. (Private letter from him dated June 25th, 1878.) In Case I. the tumor returned in full force; Case II. tumor returned, tapped, exposure, peritonitis, death; autopsy revealed a fibrocyst, no ovarian tumor at all; Case III. (Mrs. Read), return and inflammation of cyst after renewed galvano-puncture, ovariotomy, recovery.—Ed.

Dr. Ellwood Wilson, of Philadelphia, explains his *method of treating anteflexions and constrictions at the os internum by rapid dilatation*, with a cut of his instrument. His method is not so severe as that advocated by Dr. Ball, of Brooklyn. He also dispenses with the intrauterine stem after the operation. Dr. J. P. Reynolds upholds Dr. Uvedale West's *views of rotation in occipital positions* in a short, concise, and clearly written paper. Dr. A. Reeves Jackson gives the history of a few cases of *Vascular Tumors within the Female Urethra*, dwells upon the importance of searching for them, and shows a urethral speculum for use in operating. He advocates removal by scissors, and then touching the base with fuming nitric acid.

Dr. Garrigues, of Brooklyn, has a very carefully-written, long, and learned paper on Lying-in Hospitals. Starting out with the resolutions adopted by the International Congress of Physicians of 1875, he finally approves of them, but with very considerable modification. In the second part he gives an account of the various lying-in hospitals in New York, and the statistics of each. His paper cannot fail to do good.

Dr. Reamy treats of the *Simple Varieties of Perineal Lacerations*, and, it seems to us, rather overrates their consequences. He favors operation in nearly all cases.

A paper by Dr. Goodman on the *Cyclical Theory of Menstruation*, and an "*In memoriam C. E. Buckingham*" complete the list of original articles.

In this notice we have only tried to point out the main features of the book, with scarce any remark or comment. We regret that the shortness of the time allowed, as well as the limited space at our disposal, will not permit a more extended notice, or rather a real review. But there is little to criticise where each writer is an authority on his subject. The book is a most valuable one, exceeding both in value and interest the preceding volume. As before, the reports of the discussions are of nearly as much value as the original articles; for in them we get all the different views of those who are experts in these matters, placed side by side for comparison and study. We cannot close without, in the name of the profession, thanking the Secretary of the Society for the very complete "Index of Obstetric and Gynecological Literature of all countries from July 1st, 1876, to January 1st, 1877," with which the volume closes. The general get up of the book is the same as its sister volume; and while it is very pleasant to the eye, we have found its outside beauty to be of a very perishable nature. M. D. M.

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ORIGINAL COMMUNICATIONS.

THE CYCLICAL THEORY OF MENSTRUATION.

BY

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Some confusion has arisen with reference to the scope and signification of the term Menstruation, in consequence of certain writers having proposed to interpret it in accordance with their own theoretical ideas of the origin or purpose of the menstrual function. In order to avoid all embarrassment from this source, I shall use the word in its primitive and most restricted sense, as implying, simply, a sanguineous defluxion from the genital tract of the human female, the chief characteristics of which are, that it is not symptomatic of disease and has a tendency to recur periodically, most frequently at monthly intervals. This defluxion may be regarded as the final event of a series, and an inquiry into its nature must, necessarily, involve a consideration of all associated phenomena. I will accept as demonstrated facts, that the discharged fluid consists, essentially, of unaltered blood, and that it proceeds from ruptured capillaries on the internal surface of the body of the womb.

The testimony of all observers concurs as to the coincidence of a general congestion of the generative organs with the menstrual flow; and that these bear to each other the relation of cause and effect I can see no sufficient reason to doubt, notwithstanding the paramount importance which some recent observers attach to the structural changes which take place in the uterine mucosa. The congestion uniformly precedes the flow; when it attains its greatest intensity, the flow ensues, and subsequently it subsides. An invariable antecedent and concomitant is not necessarily the cause of an effect; but when the antecedent is of a nature, according to our conception of the action of forces, to produce the sequence, it is presumable that the one has taken part in the causation of the other; and this presumption is converted into a certainty, when the withdrawal of the first prevents the occurrence or suspends the existence of the second. The engorgement which preludes and accompanies menstruation is of the kind specified; for nothing is more reasonable to suppose than that blood-vessels are liable to be ruptured by distention, and its extinction by means of venesection prevents or arrests the flow. Hence I feel authorized in assuming, that *the congestion of the uterus which obtains at the menstrual period is the principal factor in the production, if not the sole cause, of the hemorrhage.*

It cannot be denied that the mucous membrane of the uterus undergoes notable alterations in connection with menstruation. These have been described as consisting of tumefaction, in consequence of enlargement and proliferation of its component cells (hypertrophy and hyperplasia), and afterwards in fatty degeneration and more or less exfoliation. A difference of opinion exists as to the extent to which the latter process is carried. Engelmann[1] maintains that the fatty degeneration is confined to the superficial layers, and that simply a portion of the epithelial investment is thrown off; whilst Williams[2] contends that the whole thickness of the membrane undergoes disintegration and desquamation. I do not propose, in this connection, to discuss the relative merits of these two opinions, but will simply say that, on account of the histological objections advanced by Engelmann against the latter, together with certain physiological reasons, I am disposed to adopt his views, in preference to those of Williams. In either case, the effect would be to weaken, denude, or disorganize the walls of the capillaries, and in this way determine the escape of blood from the free surface of the uterine cavity.[1]

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[1] American Journal of Obstetrics, May, 1875.

[2] Obstet. Jour. of Great Britain and Ireland, Feb. and March, 1875.

There is not the slightest doubt in my mind, however, that these structural changes are themselves dependent upon the congestion. Growth and nutrition were at one time regarded as purely vegetative functions, over which the nervous and vascular supply exercised no modifying influence. Virchow, in particular, maintained this doctrine; the development which took place under the action of a local stimulus he attributed to what he designated "*nutritive and formative* irritation of the tissues themselves;" but it is a little curious that the very experiment which he cited (section of the cervical sympathetic), as showing that active hyperemia could not engender hypertrophy, has since afforded proof directly to the contrary. Recent authorities admit, not only that active, but that passive congestion also may cause hypertrophy and hyperplasia, examples of which are seen in the various forms of varices from obstruction. In order to have this effect, the congestion must be slowly established and must continue for a good while; when suddenly induced, the tendency is rather to serous effusion. Billroth says on this subject, "Continued stagnation of blood or lymph, as well as their coagulation in the vessels, first induces hyperplasia of the walls of the vessels and the parts immediately around them, distention and tortuosity of the vessels, and thickening of the tissue; the skin of the leg is particularly exposed to this disease, when there is any continued opposition to the escape of venous blood from the extremity." Pathologists do not agree exactly as to the way in which these hyperplasias are produced; according to some, they depend upon proliferation of the original cells, and others attribute them to an infiltration of the tissues with white blood-corpuscles, *wandering cells*, which escape from the vessels in consequence of intravascular pressure. Making the proper allowance for this difference of opinion, and the consequent difference in phraseology on the part of observers, we will find the descriptions of the changes which occur at the menstrual period in the lining membrane of the uterus correspond very closely with those of hypertrophy and hyperplasia in other parts of the body from various causes, including obstructive venous congestion. In fact, the only essential peculiarity of the former is the low vital activity by which it is characterized, for, notwithstanding the multiplication in the cellular elements, there is no formation of new blood-vessels (Engelmann), the membrane loses its tenacity, becoming sometimes almost diffluent, and finally undergoes fatty degeneration, the most common cause of which is defective nutrition.

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[1] Leopold could not detect any retrograde metamorphosis, and denies their existence (AM. JOUR. OBSTET., April, 1878). But positive evidence is more valuable than negative, and as I regard Engelmann as a competent observer, I must give my credence in favor of his statements. The truth of the matter I believe to be that these changes are not absolutely necessary to enable the hemorrhage to take place, as is indicated in vicarious menstruation, where the unaltered capillaries of the skin and mucous membrane are ruptured; and in uterine menstruation they probably vary in degree in different individuals, and in the same individual at different times; possibly, in some cases, they may be absent entirely.

The explanation given by Engelmann of the discrepancy between the results of his own investigations and those of Williams, is in unison with this idea of a low organization of the menstrual neoplasm. He claims that his specimens were taken chiefly from the bodies of women who had died of acute diseases or from violence; but those of Williams were of a pathological character, the individuals having been, for the most part, subjects of exhausting diseases, such as typhoid fever, pneumonia, etc. From this it would appear that he believes a vitiated and depraved state of the nutritive functions in general favors and intensifies the molecular changes referred to.

The Ovular Theory of Menstruation teaches that, when a Graäfian vesicle approaches maturity, it creates an irritation which determines an afflux of blood to the pelvic viscera. If this were true, the congestion should be somewhat rapidly established, and should subside precipitately, for the rupture of the follicle would at once remove the source of the irritation. On the contrary, we know that the menstrual perturbation advances slowly to its acme, and recedes in a like manner. Every physician who has used the speculum much is aware, that blood or bloody mucus may be detected issuing from the os uteri twenty-four, sometimes forty-eight hours before and after the discharge is noticed externally. If the initial and concluding stages are thus protracted, it is reasonable to infer that the preliminary changes which induce the hemorrhage are equally gradual in their progress, and that after its cessation, some time must elapse before the disturbing influences would completely subside.

Engelmann deduced a similar opinion from his anatomical researches, as the following quotations will show. "The facts gathered warrant the conclusion that the mucous membrane of the womb begins to increase in thickness and succulence as the time of menstruation approaches, that the tumefaction is most marked during the period itself, and gradually decreases after the catamenial discharge." "Anatomical experience, as I will show, does not bear out the assumption, which theoretically appears well founded, that the menstrual changes of the mucous membrane just described, come and go as rapidly as the menstrual period itself." "We rarely find a completely normal, inactive uterine mucosa, which seems to indicate that the actual period of rest for that membrane is much shorter than is generally assumed."

Ritchie says, "Menstruation gives rise to a congested state of the uterine vessels, manifested by a redness and increased vascularity of the vagina, and the production on the internal surface of the cavity of the uterus of a meshwork of deciduous, villous vessels, which may remain for two weeks."

It will hence be seen that ample time is allowed for the menstrual development to take place under the influence of congestion.

The most interesting and important of all the problems in this connection is that which relates to the vascular mechanism by which the menstrual congestion is produced. Before we enter upon this inquiry, however, it will be advisable to obtain a correct conception of the general features and extent of the congestion.

During menstruation the uterus undergoes a considerable augmentation in bulk, which may be appreciated by a digital examination per vaginam, or by the use of the sound. Its weight is, of course, correspondingly increased, and there is a slight tendency to prolapsus. It has also been noticed, in flexions of the organ, that it becomes straighter, and may even assume a perfectly normal shape. These modifications have been imputed exclusively to the engorgement of the uterine blood-vessels; but in view of the development which takes place in the mucous membrane, it becomes highly probable that the same influences would engender an analogous development in the parenchyma, and the enlargement may to a certain extent arise from this cause. It must nevertheless be admitted that the force of the congestion is very great, as is evinced by the distention of the womb when the menses are retained within its cavity, by the occasional bursting of the Fallopian tubes, and by the rupture of veins. In accidents of the last kind, it is true, it is surmised that the coats of the vessels have been already weakened by long-continued dilatation, the veins in this locality being exceedingly prone to become varicose, owing to the absence of valves, and this tendency is increased by pregnancy; but instances have been reported of such events occurring in young girls who had never conceived, in which there was no ground to assume the pre-existence of a morbid state. One in point is recorded by Tuckwell, where a fatal catamenial hematocele ensued from the rupture of a vein of the left Fallopian tube, in a girl eighteen years of age. In autopsies of women who have died while menstruating, the uterine and ovarian plexuses have frequently been found much engorged, but that this should not uniformly be the case is very easily accounted for; the cause of the congestion being a vital action, would cease with death, and the blood would seek an equilibrium with that in the rest of the venous system.

The ovaries participate in an equal degree with the uterus in the menstrual congestion; in some cases their firm tissue has been rent asunder and apoplectic clots of considerable size formed within the substance of the organs; and the Fallopian tubes, the vagina, and the external genitalia are more or less affected.

It is really remarkable how little attention this question has received at the hands of gynecologists. Most of them make no allusion to the nature of the menstrual congestion, and those who do are wonderfully brief and unsatisfactory. Meigs, for instance, speaks of it as "A positive afluxion of sanguineous humors . . . to the whole system of the reproductive organs;" Barnes says, "The active physiological process going on in the ovaries naturally determines the blood-current in especial force to the pelvic organs;" and Schroeder simply denominates it an "arterial congestion." As indicated by these expressions, the prevailing sentiment appears to be, that it is of the character of what is entitled an ACTIVE CONGESTION, one in the genesis of which the arteries are the efficient agents. It has been suggested that the arteries might possess the power, by means of peristaltic action, of exerting a propulsive force upon their contents, and in this way of driving the blood into the structures to which they are distributed; but this idea has been abandoned, and the only form of active congestion now recognized by physiologists is that which accrues from a relaxation of the muscular coats of these vessels, in consequence of which they dilate and permit the tissues to be inundated, so to speak, with blood. I know of no proofs that have ever been advanced to show that this is the form of congestion which takes place in the generative organs during menstruation. It seems to be a mere assumption based upon a supposed analogy with what is witnessed in glandular structures in states of physiological activity, and in parts subjected to local irritation, while very strong evidence may be adduced to the contrary.

The internal organs of generation are supplied with blood by four arteries, the two uterine and the two ovarian, each of which is accompanied by at least one vein, and usually the uterine veins are double. Physiologists tell us that the veins throughout the body are between three and four times more capacious than their associate arteries, and that this disproportion persists down to the capillaries. An inspection of a carefully injected dissection of the pelvic viscera will convince any one that the vessels here do not afford an exception to this rule. Immediately upon emerging from the uterus, the veins anastomose freely with each other and with the extensive venous plexuses in the vicinity, so that the channels for the egress of blood and its onward flow to the vena cava are exceedingly ample.

Supposing a progressive dilatation of the arteries to set in; it is clear that they could not conduct enough blood into the parts to tax the capacity of the veins in carrying it off until they had attained three times their original calibre. After this point was passed, and the apertures of influx become greater than those of efflux, an accumulation of blood would take place in the capillaries and erectile spaces, and a gradually increasing pressure would be exerted on their internal surfaces; but it must be seen by any one acquainted with the most elementary principles of physics that this pressure could never be rendered equal to that with which the blood is propelled in the arteries, as long as there was any leakage. To accomplish this, the venous conduits must be hermetically closed, and the cells filled by the arteries in the same manner that the cistern of a hydrostatic press is filled by its injecting pipe. It is unfortunate that we have no means of gauging the pressure that is sustained by the tissues of the generative organs during menstruation; estimating it by its effects, I believe it to be, in some cases, little short of the full force of the arterial circulation. For a force even approximating this to be brought to bear, without closure of the veins, an enormous enlargement of the arteries would be requisite—one, at all events, sufficient to be detected by the sense of touch. Yet I have made many examinations of the uterine arteries, through the walls of the vagina, without being able to perceive any increase in their size or impulse at the menstrual periods. Fluctuations can be discerned, but they bear no fixed relations to menstruation, and depend, in all probability, upon some reciprocal action between the uterine and ovarian arteries.

Admit, for the sake of argument, that the necessary arterial action might occur without being detected, or that the work of flooding the parts with blood devolves exclusively upon the ovarian arteries which are out of reach, we would thus account for the parenchymatous swelling of the uterus and ovaries; but can we imagine it possible for the blood to pass through these structures with sufficient force and in sufficient quantity, subsequently, to distend the veins, even to rupture them? This query I should most assuredly answer in the negative; for it must be remembered that the resistance offered by the capillaries to the passage of the blood takes off from three-fifths to two-thirds of its force, and that the walls of the veins are elastic and, although thinner than those of the arteries in their normal state, are more capable of resisting pressure.

I at one time hoped that this point might be definitely settled by thermometric observations upon the generative organs, but have found the subject more intricate than I anticipated, and have not been able to arrive at positive results; yet the burden of the evidence, if I do not misinterpret it, is against the theory of arterial congestion.

It is now an established fact that the temperature of a part depends largely upon its blood supply, and if there is an increased afflux of blood to any organ or tissue in a physiological state, an elevation of temperature invariably follows. In experiments in which paralysis of the vaso-constrictor nerves has been artificially induced, an astonishing increase of heat has been observed. For example, in some instances, where the sympathetic nerve has been divided in the neck, causing a dilatation of the vessels on that side of the head, the temperature has risen as much as 18° Fahr.

Very little seems to be known as to the variations of the temperature of the generative organs in connection with menstruation. Schroeder remarks that, "In opposition to the older statements, Rabuteau declares that the temperature, as measured in the vagina, shows an average depression of about 1° Fahr., and that the frequency of the pulse is also less. The excretion of urea is also diminished. Hennig was able to confirm the fall of the pulse, but not of the temperature." In my own investigations I have encountered very great difficulties, the chief of which has arisen from my inability to procure perfectly healthy individuals as subjects, by whom to establish a physiological standard. I have made over six hundred observations distributed among eighteen women, in every one of whom some trouble of the generative organs was at least suspected. In some the actual disease was slight, and in two, who had applied for relief from sterility, nothing abnormal could be detected. I have found that there is *almost* always an appreciable alteration of the temperature of the uterus and vagina as compared with that of the body, as indicated in the axilla, at the menstrual periods. In the majority there was a relative elevation of the temperature of these organs, in the early stages of menstruation, but in no instance did the maximum during menstruation exceed that of the intermenstrual period more than ½° Fahr. In some the relative temperature would fall at one period and rise at another from causes of which I could take no cognizance; and in others *it would be uniformly depressed at the menstrual periods*, the depression usually manifesting itself several days beforehand. The following case affords an example of the last kind :

The subject of the observations was a virgin 20 years of age, and of delicate aspect. Her local troubles were anteflexion of the womb and tenderness, with some enlargement, of the right ovary.

Date.	Temperature of Vagina.	Temperature of Uterus.	Temperature in Axillary space.	Excess of Vag. Temp. over Uterine.	Excess of Vag. Temp. over Axillary.	Excess of Uterine Temp. over Axillary.	Pulse.	Day of Menstruation.	The pulsations of the uterine arteries could not be felt through the vaginal walls at any time.
Oct. 3 .	99¼	. .	98¼°	. .	1°	. .	. .		
Oct. 9 .	99½	99¼°	98½	¼	1	¾°	80		
Oct. 12 .	99¾	99¼	98¾	½	1	½	84		
Oct. 13 .	99½	99¼	98½	¼	1	¾	82		
Oct. 14 .	99½	99¼	98½	¼	1	¾	76		
Oct. 15 .	99½	99¼	98½	¼	1	¾	. .		
Oct. 16 .	99¼	98¾	98½	½	¾	¼	82		
Oct. 17 .	99¼	99	98¾	¼	½	¼	78	1st day	Menstruation free and painful.
Oct. 18 .	99½	99¼	98¾	¼	¾	½	70	2d day	
Oct. 20 .	99½	99¼	98¾	¼	¾	½	73	Last d.	
Oct. 23 .	99½	99	98½	½	1	½	88		
Oct. 30 .	99½	98¾	98¼	¾	1¼	½	86		
Nov. 6.	99¼	99¼	98½	0	¾	¾	81		
Nov. 12.	99¼	99¼	98½	0	¾	¾	84		
Nov. 14.	99½	99½	99	0	½	½	86		
Nov. 16.	99½	99½	99¼	0	¼	¼	84	1st day	Suffering from severe cold. Menstruation free and slightly painful.
Nov. 27.	99½	99½	99	0	½	½	80		
Dec. 7.	99½	. .	98½	. .	1	. .	84		
Dec. 11.	99½	99¼	98¾	. .	¾	. .	92		
Dec. 20.	99½	. .	99¼	. .	¼	. .	80	2d day	Menstruation free. No pain.

In order to produce the mechanical effects heretofore alluded to, the arterial congestion must be quite intense, and, I should think, would necessarily lead to a greater elevation of temperature than was witnessed in any of my cases ; and while I can readily conceive that a rise in temperature might accompany a venous congestion of the parts, I cannot see how a fall in temperature could be compatible with an active hyperemia.

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[1] "It is certain that whatever determines an increased supply of blood to any part, raises the temperature ; and, whenever the quantity of blood in any organ or part is considerably diminished, its temperature is reduced." Flint's Text-Book of Phys., page 514.

The only form of congestion to which all the phenomena of menstruation can be satisfactorily ascribed, is one due to an impediment in the course of the venous circulation. From this we would expect a low grade of hypertrophic and hyperplastic development; it would account for the distention of the veins, as well as of the parenchyma of the generative organs; for the force with which the blood is effused in the uterine cavity in cases of cervical occlusion; for ruptures of the tubes and ovaries, and would not necessitate an enlargement of the arteries, nor lead, uniformly, to an elevation of the temperature.

The question next obtrudes itself upon us as to the nature of this impediment, Can we assign any reasonable cause for the venous obstruction?

A mechanical venous congestion is thought by some to exist in the process of erection of both the male and female organs, but is denied by others, chiefly in consequence of the difficulty anatomists have had in pointing out the manner in which it could be produced, and because erection does not follow the ligation of the principal veins of the penis. Muller long ago demonstrated that it required the full force of the arterial blood pressure to accomplish perfect erection, and, as we have already explained, this cannot be brought into action without venous obstruction. Accordingly, in order to give the proper rigidity to the corpora cavernosa by artificial injection, he found it indispensable to prevent the return of blood through the veins by pressure *within the pelvis.* Thus the necessity for the existence of some means of arresting the venous current is proven mathematically and experimentally.

The mechanism by which this arrest is effected has, I think, been sufficiently indicated by modern anatomists. Savage states that, as the pudic vessels pass backward between the aponeuroses of the perineal septum, "the veins, unlike the arteries, are subject to compression by some of the muscular fibres of the septum which separate the two vessels by passing between them." Frey, in speaking of erection of the penis, says, "no doubt hindrance to the exit of the blood from the organ increases the erection," which hindrance he believes to depend on the action of "smooth muscles." The uterus and ovaries are as eminently erectile in structure as the external organs, and since the rationale of erection must be the same in both cases, it is a valid inference that a similar collocotion of muscular fibres must exist in connection with the uterine and ovarian veins or their branches. If, through the intervention of such an agency, the veins could be hermetically closed, complete erection would follow; but this is impossible in consequence of the free venous anastomoses in these parts, and a supplementary action on the part of the arteries becomes necessary, in order to give perfection and promptness to the process. For the execution of this function the arteries are peculiarly adapted in structure. Every investigator who has had occasion to refer to the subject at all, has noted the unusual thickness of the walls of the blood-vessels of the organs of generation, especially of the internal ones. This is owing to an excessive development of their muscular tunics. According to Frey, the arteries of the ovaries possess wonderfully thick muscular coats; and Chroback says with reference to the vessels of the cervical portion of the uterus (which is believed by some to be endowed with special erectile properties), "The thickness of their walls is so disproportionate that the calibre of each vessel is only about a third of its gross diameter." Through this endowment, they are capable of undergoing either contraction or dilatation in an extreme degree.

In the act of erection, as thus explained, we have a precedent for asserting the participation of an obstructive congestion in determining the functions of the generative apparatus.

The influences which preside over the menstrual congestion are generally believed to be circumscribed in character and limited to that portion of the organism in immediate relation with the generative organs. Savage mentions cases as having been recorded of double uterus, in which menstruation took place from the two horns at different epochs. If this were true, it would certainly tend to sustain the above idea; but I have not seen the original reports, and do not know by whom or with what accuracy the observations were made, and, consequently, do not attach any importance to them; especially as Klob states to the contrary, on the authority of Kussmaul, that "in all these malformations of the uterus, menstruation occurs in the same manner as in the normal organ, and the menstrual flow proceeds from both or only one uterine half."

During menstruation disturbed innervation and disordered vascular action are witnessed throughout the entire economy. In vicarious menstruation we have the specific phenomena of menstruation, periodic physiological hemorrhage, manifesting itself in different parts of the body, and this, notwithstanding the normal discharge from the uterus may continue, showing that there is not simply a diversion of the menstrual force from its usual channels, but that distant parts are affected simultaneously in the same way.

Scanzoni is undoubtedly correct in attributing vicarious menstruation, not to a concentration of nervous energy upon the affected part, but, as a general rule, to an abnormality of the implicated tissues. Thus, some years ago, a young woman was under the joint care of Dr. E. R. Palmer and myself; upon one cheek there was a large *nevus maternus*, and the same condition of the blood-vessels existed in the buccal mucous membrane, extending as far as could be seen down the throat. At her menstrual periods she frequently suffered from hemoptysis, the blood coming from the pharynx and upper part of the esophagus. Recently, a still more striking case has occurred in my own practice. A girl, now sixteen years of age, has been my patient since infancy. When quite young, she complained of symptoms which led to an examination of the throat, and it was discovered that one tonsil and the corresponding half of the pharynx presented the appearance of a capillary nevus. Inflammation from cold would cause these structures to become very much swollen and sometimes to bleed. Bearing in mind the previous case, I predicted that she would menstruate vicariously from this locality when she arrived at puberty. The first menstrual period occurred in August last (1877), and, as is frequently the case on such occasions, the molimen was intense and the hemorrhage very free. On the second day she began to spit blood, and in the course of a few hours, the hemorrhage from the throat became alarming. Under the exhaustion thus produced, the discharge from the uterus ceased, the vicarious menstruation continuing for three days. Upon each subsequent epoch the flow has been moderate, and accompanied by an expectoration of bloody mucous. Cases of a similar nature have been met with, in which the diseased surfaces were situated on various parts of the mucous membranes and the skin.

What explanation can be given of such cases? Why do the walls of capillaries, which happen to be abnormally attenuated, rupture and pour forth their contents coincidently with the menstrual epochs? It can only be in consequence of increased pressure from within, and this increased blood-pressure must depend upon a contraction of the muscular elements of the arteries and veins.

Other proofs may be advanced, not only confirmatory of the existence of augmented vascular tension, but showing that it antedates the menstrual flow. Women who are affected with varicose veins experience a fullness in them several days before menstruation. One of my patients has a knot of varicose veins in the bend of the knee; about three days before menstruation these become so swollen and tender as to interfere with locomotion; the pain is somewhat mitigated when the flow is established, and ceases entirely upon its subsidence. The thyroid gland, the spleen, and hemorrhoidal tumors are known to enlarge before and during menstruation; the capillaries of the mucous membranes have been noticed to become injected at this time, and the bluish hue and puffiness of the skin below the eyes, so commonly observed, can only be attributed to an engorgement of the smaller vessels in these loose tissues.[1]

The tendency of this increased contractility of the vasomotor muscular fibres, at large, would be to expel the blood to a certain extent from the arteries and larger veins, and to cause it to accumulate in those vessels which are unprovided with muscular coats, especially the capillaries and smaller veins; while the venous system, as a whole, possessing less tonicity than the arterial, would be the receptacle of a relatively larger quantity of blood than usual. As the vena cava communicates with the internal organs of generation, by means of the ovarian veins and the uterine branches of the internal iliacs, and since these, as well as the veins in the substance of the organs, are devoid of valves, the full force of the retrograde venous pressure would be exerted upon the tissues of the uterus and ovaries, creating there a state, to all intents and purposes, analogous to obstructive venous congestion. The structures on the inner aspect of the uterus not only participate in the general condition, but their blood-vessels having to traverse the central or medullary portion, where they are subjected to pressure in consequence of the turgescence of the erectile spaces, the circulation is still further affected; in this way the mucous membrane of the uterus becomes the seat of a gradually increasing congestion, in which the quantity of blood in the part is augmented, but the amount passing through it in a given time is progressively diminished. Such a congestion would occasion the hypertrophy and hyperplasia of the connective tissue already mentioned; and when the blood-supply becomes insufficient for the proper nutrition of the tissues, fatty degeneration and a breaking down of the superficial layers would ensue. The relative time, with reference to the progress of these changes, at which the hemorrhage occurs, I believe varies in different individuals. The strength of the walls of the capillaries cannot be the same in all cases; in some they probably yield at an early period, while in others they are capable of resisting until the disintegrating process sets in.

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[1] See Tilt on Uterine and Ovarian Inflammation, Third Edition, page 159, *et seq.* Jones and Sieveking's Pathological Anatomy, First Am. Ed., page 539. Whitehead on the Causes and Treatment of Abortion and Sterility, Second Am. Ed., page 36.

It might appear, in view of the fluctuations in the actual amount of the contents of the blood-vessels, arising from the irregularity in the absorption of ingesta, and the variations in the force and frequency of the heart's action, that the blood pressure could not be maintained with sufficient uniformity to accomplish so definite a result. Some very interesting experiments, by Worm-Muller and L. Lesser, are referred to in an article by Lesser, in the Transactions of the New Sydenham Society, vol. lxxi., which throw light upon this point. By these it is shown that, if the quantity of blood in a healthy animal be increased by transfusion, there is at first a slight elevation of the blood-pressure which soon subsides; if the operation be renewed, the pressure cannot be made to rise again above the normal, though the original amount of blood in the body of the animal be doubled or tripled. If an animal which has previously been bled be transfused, the blood-pressure may be restored to the normal, but cannot be made to go beyond. A slight bleeding has no perceptible effect upon the blood-pressure, but free venesection causes it to fall regularly until it reaches zero. The researches demonstrate that, when the blood-vessels are not suddenly and abnormally depleted, the blood-pressure is regulated by the vaso-motor muscles.

Although I regard this general action on the part of the circulatory system as in itself a sufficient cause for all of the ordinary phenomena of menstruation, it does not seem to me to satisfactorily explain certain cases of vicarious menstruation, nor fully to account for some of the mechanical effects witnessed in connection with the generative organs, such as the rupturing of veins, the rending of the ovarian stroma, etc.

Take, for instance, the following case of vicarious menstruation which occurred within my own experience. An unmarried woman, twenty-six years of age, applied to me for treatment for supposed womb disease. She was of spare habit and anemic, having always suffered from derangement of the digestive organs, and since puberty had experienced many distressing nervous symptoms. Menstruation was scanty and painful, and at each period, for some months previously, on the first or second day, red splotches, of variable size and shape, would make their appearance on the upper parts of the chest and arms. These were undoubtedly ecchymoses from ruptured cutaneous capillaries. After a few days they would fade away, leaving the skin, in so far as an ocular inspection could determine, in a perfectly natural state. Could these vessels have been ruptured in consequence of an increase in the general blood pressure? I think not. There are capillaries, more delicate than those of the skin, which would have yielded in preference. In the experiments of Worm-Muller, when the vascular system was filled to repletion, the first extravasations occurred on the surface of the serous membranes. It is impossible for this extreme distention of the capillaries to arise from any action of the blood-vessels, for the arteries, being more muscular than the veins, would contract with the greater force, and capillary anemia, rather than plethora, would be the result. The efficient cause must be extraneous to the blood-vessels. The corium, the deeper layer of the true skin, is rich in involuntary muscular fibres, which surround the blood-vessels that pass to and from the more superficial or papillary portion; a contraction of these would have the effect of damming up the blood in the capillaries, for the walls of the venous radicles are thinner and more yielding than those of the arterioles. That some subsidiary influence is exerted by this class of muscular fibres is sustained by the fact that vicarious menstruation is common from the cutaneous and mucous surfaces, the mucous membranes being also largely provided with muscular tissue (*muscularis mucosa*), while it never takes place from serous membranes in which this histological element is almost, if not entirely, wanting.

In looking to the generative apparatus for some means through which the blood stasis may be intensified in uterine menstruation, we find a system of muscular fibres apparently especially adapted to this purpose. Of these Virchow gives the following description: "In the alæ vespertilionum we find, moreover, very beautifully displayed a condition which is of frequent occurrence in the appendages of the generative organs, . . . the vessels, namely, are accompanied by flat bundles of smooth muscle in considerable quantity, which do not belong to them, but only follow the course of the vessels, and in part receive the vessels into them." Furthermore, the uterus itself is encompassed by a layer of subserous muscular tissue (sero-muscular platysma), resulting from a spreading out of these bundles upon its surface, which is in close relation to the blood-vessels as they emerge from its external cortex. I think it exceedingly probable that these muscular fibres participate in the determination of the local phenomenon of menstruation. They "do not belong to" the blood-vessels, yet their relation to them is so direct and intimate, that there can be no doubt of their being associated with them functionally, and this, together with their close proximity, renders it likely that they receive their nervous supply from the same source. It is true they surround the arteries as well as the veins, and their contraction would exercise an equal pressure upon both sets of vessels, but the walls of the veins would collapse more readily than those of the arteries, and their circulation would be the first to be impeded.

Whether or not these are the same muscles that are concerned in the erection of the internal organs of generation I will not attempt to decide; but even if they are, I see no reason why they should not take part in both processes. The essential difference between the circulatory disturbance of menstruation and that of erection is, that the former is slowly established, and during its continuance the tonicity of the walls of the arteries is increased; while the latter is sudden in its occurrence, and an emotional or cerebral element entering into the nervous influence, by which it is produced, there is relaxation and enlargement of the arteries. Hence it is that erection at the time of menstruation is attended with danger to the integrity of the tissue; of ten cases of catamenial hematocele reported by Voisin, seven began during sexual intercourse.

The conclusions, then, to which I am led as to the nature and cause of the menstrual function are:

1st. *That menstruation is the result of a general condition of the vascular system, the local manifestations occurring, as a rule, in the generative organs, from the fact that they are especially adapted, anatomically and histologically, for their display.*

2d. *That the general disturbance of the vascular system is of a nature to elevate the blood pressure throughout the entire organism, and arises from a contraction of the muscular coats of the arteries and veins.*

3d. *That, in all probability, when the tension of the vascular system reaches its greatest degree, activity is imparted to certain muscular fibres, which, from their collocation and only possible function, must be regarded as accessory to the vaso-motor muscles, and through their co-operation the local phenomena are intensified.*

If this view of the proximate cause of menstruation be accepted, the periodicity of the function admits of a very simple explanation, as it may be attributed to the intermittent action of involuntary muscular fibres. As is well known, the energy of this kind of muscular tissue is exerted paroxysmally, periods of activity alternating with states of rest. Each muscle or set of muscles, however, has a rhythm of its own; the heart, for instance, contracts and relaxes with great regularity seventy or eighty times a minute, and the uterus only once in from two to thirty minutes or more; while the vaso-motor muscles seem to have allotted to them a longer time for repose and correspondingly slower mode of action.[1]

I have elsewhere[2] taken the ground that the physical changes of puberty are nothing more than hypertrophies of certain tissues called into being through an altered state of the nerves, which preside over their nutrition, and that the nervous system itself must undergo a certain degree of structural development in order to engender them.[3] These changes are of the same nature in the two sexes, but affect different parts. The most notable in the male are the development of the larynx and the growth of hair upon the face; and in the female the expansion of the pelvis, the enlargement of the breasts, and the increased deposit of fat; but there are others of a less obvious character, which pertain to almost every organ and tissue in the body, and among these I believe there is in the female a hypertrophy of the muscular fibres in the walls of the blood-vessels. It is this hypertrophy that enables, it may be impels, them to assume their periodic function, just as we see in the pregnant uterus the muscular fibres more prone to spasmodic contraction in proportion to their development.

Many physiologists of the present day hold to the doctrine first enunciated by Haller, that muscular fibres possess an intrinsic irritability, by virtue of which automatic movements may be accomplished. The alternate relaxations and contractions of the heart and uterus and the peristaltic actions of various viscera are regarded "as expressions of this peculiar vital endowment of their muscular tissue." Others, to the contrary, maintain that all muscular movements are instigated by nervous influence. My own convictions are with the latter. I can see no sufficient reason for believing that muscular fibres have an inherent power of altering their condition, and am forced to adopt the opinion that all of their *functional* movements at least arise from excitations emanating from nervous centres. There can be no doubt but their equilibrium may be disturbed by chemical or mechanical irritants directly applied, but it is impossible to prove that such impressions are ever concerned in determining their functional action, except in a reflex manner through the intervention of the nervous system, in which process the motor impulse in reality proceeds from a nervous centre.

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[1] Sleep and hibernation are periodic phenomena, to some extent at least, of an intrinsic nature. In the former, the arterioles of the brain are contracted, while in the latter there is general contraction of the blood-vessels throughout the organism, and there is every reason to believe that the two states are due, respectively, to these vascular conditions; thus affording us other examples of slow rhythmical action on the part of the vaso-motor muscles.

[2] Richmond and Louisville Medical Journal, November, 1875.

[3] I do not wish to be understood as asserting that the nerves necessarily exert a *trophic* action. All of these hypertrophies may arise from modifications of the circulation, and that the vaso-motor nerves regulate the amount of blood sent to a part cannot be denied.

The rhythmic movements of various organs evidently depend upon sources of power resident within their structures. The heart of the alligator will pulsate for hours after excision. The intestinal canal presents its vermicular motions when removed from the body, and the separated oviduct of the turtle has been seen to contract so as to expel its ova. It is even claimed by some that the action of the heart continues in vacuo. Phenomena of this kind, where the parts were disconnected from all recognized nervous centres, led the older physiologists to conceive the idea of a motility belonging to the muscles themselves; but we now know that, interspersed among the organic muscular fibres, there are innumerable ganglia, ganglion cells, and nucleated fibres, which are capable of generating nervous force, and it cannot be shown that contractions can occur independently of them. Friedländer states that he has demonstrated the constant existence of ganglion cells in still pulsating portions of the heart of the frog, in which there were not in some instances more than two or three muscular fibres.

It is to nervous centres of this class, located in the walls of the blood-vessels, which, it is presumable, partake of the puberal development that affects the muscular tissue with which they are intimately associated, that I would ascribe the dynamic cause of the periodic activity of the vaso-motor muscles. As elaborators of nervous force, they are independent agents, but in the exercise of this force they are doubtless subject to disturbing influences originating in other sympathetic ganglia and in the cerebro-spinal centres, on the same principle, but not to the same extent, as is known to be the case with the intermuscular ganglia of the heart. What the process is by which their action is rendered intermittent, I will not discuss. It may consist of a recurring series of physiological acts, or it may be simply an alternation of exhaustion and recuperation of nervous energy. In either case there is a repetition of similar events in regular order of succession from first to last, and then returning to the first. Hence, I have entitled this exposition of the cause of woman's peculiar attribute, THE CYCLICAL THEORY OF MENSTRUATION.

The effect of conception upon the vascular changes of the menstrual cycle is worthy of note. The mere presence of the fecundated ovum makes an impression upon the organism of the female, and creates a powerful reaction, the first effect of which is, that the parts in the immediate vicinity of the point where it comes in contact with the maternal tissues become the seat of an active hyperemia, which gradually extends, until, in normal pregnancy, it involves the whole uterus. A rapid and progressive development of all the tissues of the womb now sets in, and the arteries continuing to enlarge, the supply of nutritive material increases with the demand, and it is not until months have elapsed and gestation is drawing to a close that any retrograde metamorphoses are witnessed in the hypertrophied mucous membrane that lines the cavity of the body of the organ (Engelmann). In all varieties of extra-uterine fetation, a similar influence is exerted upon the structures where the implantation occurs; but, what is more curious, in such cases, when the generative organs are not implicated, the uterus undergoes the same development as in ordinary pregnancy.[1] This shows that the inhibitory reaction of the vitalized ovum upon the blood-vessels is not of a purely local character, but extends to the system at large, the vascular apparatus of the uterus responding more readily to the impression than that of other parts, in consequence of its peculiar muscular endowment. During gestation the periodic contraction of the vaso-motor muscles is in this way inhibited and menstruation suspended. But I do not believe that the physiological steps of the nervous cycle are arrested, since it sometimes appears that the antagonistic influence is insufficient, and actual menstruation persists for a time after conception, and, as a general rule, evidence of their continuance may be detected under favorable circumstances. Most women experience some indications of the return of the menstrual epochs in pregnancy, and it is a well-established fact that abortions are most apt to happen at such times.

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[1] Parry on Extra-Uterine Pregnancy, page 73.

The surgical, physiological, and therapeutic bearings of this theory are numerous and important, but in view of the length to which this article has already extended, their consideration must be postponed to a future occasion. There is just one practical point to which I would at present call the attention of the profession. This has reference to the timing of surgical operations upon the female. In my opinion, no operation should be performed upon a woman during the increment of the cycle; that is, for six or seven days anterior to a menstrual epoch, and this rule should be rigidly observed whenever the individual is the subject of any derangement of the menstrual function. Some years ago, I came very near losing a patient from whom I had removed a small tumor, situated in the vesico-vaginal septum, six days before menstruation, the hemorrhage coming on twenty-four hours after the operation. Churchill mentions the case of a young lady who suffered from vicarious menstruation. Upon one occasion, having been already reduced by bleeding from the mouth and gums, she was cupped for pain in the side, when it was found impossible to arrest the hemorrhage from the scarifications, and in less than six hours she died.[1] I have met with several cases in which serious losses of blood followed the extraction of teeth at or about the menstrual period.

A CONTRIBUTION TO THE HISTORY OF THE DEVELOPMENT OF THE HUMAN DECIDUA.

BY

J. W. FRANKL, M.D.

New York.

(With one lithographic plate.)

IT is acknowledged that the placenta represents a connective-tissue formation belonging to the myxomatous variety.

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[1] Churchill on Diseases of Women, 1857, page 161.

Formerly some histologists (Friedländer and others) were of the opinion that epithelial elements enter into the construction of the placenta; but since the publications of G. J. Engelmann and Hanns Kundrat, and recently of Gerhard Leopold, this view can no longer be maintained, and with the exception of the epithelial covering of the villi of the placenta, we now scarcely look for epithelial bodies in the stroma, either in its villous or solid part.

The development of the placenta in its minutest elements has so far been very little studied. We know, since the publications of W. Reitz,[1] of St. Petersburg, that the villi are originally solid protoplasmic masses, without any differentiation into stroma, blood-vessels, and covering epithelium, which differentiation they present only with the advancing growth of the embryo. Indeed, it is easy to satisfy one's self about the correctness of the assertions of Reitz on growing placentæ of the second, third, and fourth months, where formed villosities are already to be seen, beset with more or less distinctly pediculated buds of a uniform protoplasmic structure. But how the solid part of the placenta, that nearest to the amnion, the so-called *decidua*, advances in growth, especially the formation of the myxomatous basis-substance, has not yet been elucidated.

Engelmann and Kundrat[2] described the peculiar clusters of large decidua-cells occurring in the growing decidua-layer of the placenta. They consider these clusters as being in connection with the development of the villi. Gerhard Leopold[3] repeatedly mentions their presence, and suggests that these clusters, as he asserts, most numerous in the fifth month of development of the placenta, are split into smaller and larger cells. How this is done he does not say. George Hoggan and Frances Elizabeth Hoggan[4] also conclude that the large, so-called embryonic multinuclear "decidua-cells," give rise to the formative cells of the decidua, but they do not specify their view, nor describe the way in which the latter originate from the former.

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[1] Sitzungsberichte der Kais. Acad. d. Wissenschaften in Wien, Bd. LVII.

[2] Untersuchungen über d. Uterus-Schleimhaut. Wiener mediz. Jahrbücher, 1873.

[3] Die Uterus-Schleimhaut während der Schwangerschaft und der Bau der Placenta. Arch. f. Gynäkologie, ii. Th., xi. Bd.

[4] Zur Pathologie u. Therapie d. Dysmenorrhœa membranacea. Arch. f. Gynäkologic, x. Bd.

In the growing placenta we always meet in the decidua-layer with multinucleated protoplasmic masses, sharply marked from the surrounding myxomatous basis-substance.

These clusters are numerous in earlier stages of the developing placenta, where the decidua itself is only of a relatively small diameter; while the fully developed placenta, in its solid part, is of a noticeable width, but altogether devoid of the protoplasmic clusters above mentioned. On the contrary, single protoplasmic elements, surrounded by the network of the myxomatous connective tissue, are present only in a relatively small number in the growing decidua; while they constitute the whole solid part of the fully-developed placenta.

This fact led the authors above mentioned to the conclusion that the isolated decidua-elements originate from protoplasmic clusters, and that, on closer examination, this conclusion proves to be the correct one, I presently intend to demonstrate.

The only way to examine a placenta, in my opinion, is to cut the tissue with a razor after it has been sufficiently hardened by a repeatedly changed one-half per cent chromic acid solution.

I cannot advocate the picking method of the villous portion, and still less, of course, that of the decidua. By cutting we oftentimes succeed in obtaining thin sections of the villosities in different directions, perfectly fit for examination even by the highest powers of the microscope.

Such sections are easily made through the solid part of the placenta; while picking will always bring to view debris of the tissue only, as a rule mangled to such an extent that a close examination under the microscope is a matter of impossibility.

The sections, as obtained by cutting with the razor, are preserved in glycerin, half diluted with distilled water. The specimens, lastly, should be mounted with cement—for instance, asphalt. This method, if compared with the former one of inclosure in Canada balsam or damar varnish, proves to be the far superior one, both with regard to the clearness of the image and the durability of the specimen, always provided that the placenta has been left exposed to the action of the one-half per cent solution of chromic acid for a sufficiently long period of time; that is, for at least six to eight weeks. No farther treatment of the placenta is required.

Specimens obtained from the solid part of a placenta of the sixth month's development, with a power of about 500 diameters, show a great number of protoplasmic formations, partly built up by large nucleated elements, partly by a uniform granular mass, in which there are imbedded nuclei in a more or less varying number. Besides, we meet with protoplasmic clusters, in which nuclei cannot be recognized, but a differentiation into small granular spindle-shaped elements can be traced out. These protoplasmic masses, as a rule, are distinctly bounded toward the surrounding myxomatous basis-substance, which, owing to its apparently homogeneous, highly refracting structure, is a well-defined formation. The network of the myxomatous connective tissue is partly loose and delicate, including in almost every mesh a granular protoplasmic body, this being either provided with or devoid of a nucleus, while in other places the myxomatous network is very heavy, its meshes being narrow and filled with a light, apparently homogeneous, structureless-looking substance. A still higher development of the connective tissue can be found only around the arteries, the adventitia of which is a combination of myxomatous with fibrous connective tissue, inasmuch as bundles of delicate fibres form an elongated network, and in the meshes of these again granular, partly nucleated protoplasmic bodies are visible. The veins, on the contrary, being sinuous and irregular in their outlines in a hardened specimen, are directly surrounded by loose myxomatous connective tissue.

Sections made through the solid part of a placenta of nine months, if seen with a power of 500 diameters, show the complete absence of protoplasmic clusters, the "giant-cells" of the authors, and the whole tissue is decidedly myxomatous in structure. The meshes of this tissue are partly filled with single, chiefly nucleated protoplasmic bodies, many of which, owing to the prevalent amount of basis-substance, are very narrow, and contain a light, apparently structureless substance. Besides, a considerable amount of fibrous tissue is to be seen principally in the neighborhood of arteries, the adventitia of which is altogether fibrous in structure. Where several arteries run through the stroma near each other, the adventitial layer, common to all, consists mainly of fibrous structure, between which relatively small bridges of myxomatous tissue are left.

Let us now examine the formations in the solid part of the placenta with an immersion lens with the magnifying power of 1,200 diameters, beginning with a six-months' placenta (fig. 1).

The stroma is built up by protoplasm (fig. 1, *a*), arranged in the shape of multinuclear bodies, and by the basis substance (fig. 1, *bb*). The latter, looking homogeneous or finely granular with a low power, proves to be formed by extremely small spindles closely packed together, if seen with a high power. These spindles are united with each other by delicate threads, running vertically through all the trabeculæ of the basis-substance. In the meshes of the reticular basis-substance, again, we find round or oblong protoplasmic bodies (fig. 1, *cc*).

Wherever we meet with protoplasm, its structure, as first described by C. Heitzmann,[1] is plainly visible. Coarse granules present in the midst of nuclei, the so-called nucleoli, send out radiated spokes, through which they are united with the neighboring smaller granules. Again, these granules are united with each other and with the shell of the nucleus by means of delicate threads. The shell of the nucleus, being either a smooth or granular layer, although continuous under all circumstances, projects very minute radiated offshoots, which traverse the light seam around the nucleus, and run to the next granules of the protoplasmic body. All granules of the latter are united more or less distinctly by fine threads, so much so that a delicate network is established throughout the protoplasm. Where protoplasm meets with basis-substance, we always see numerous fine threads projecting into the basis-substance, where they are lost to sight.

The author just named claims that what we call protoplasm is only one stage in the development of living matter. This first presents a shining homogeneous body, later a mass provided with vacuoles, in which the living matter is differentiated into a framework, and lastly assumes the appearance of a delicate network, the points of intersection of which give what are called the granules of the protoplasm.

According to this view, therefore, the nucleolus, the gran-

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[1] Untersuchungen über das Protoplasma. Sitzungsberichte d. Kais. Acad. d. Wissensch. Wien, 1873.

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AND
DISEASES OF WOMEN AND CHILDREN.

OCTOBER, 1878.

Fig. 1.

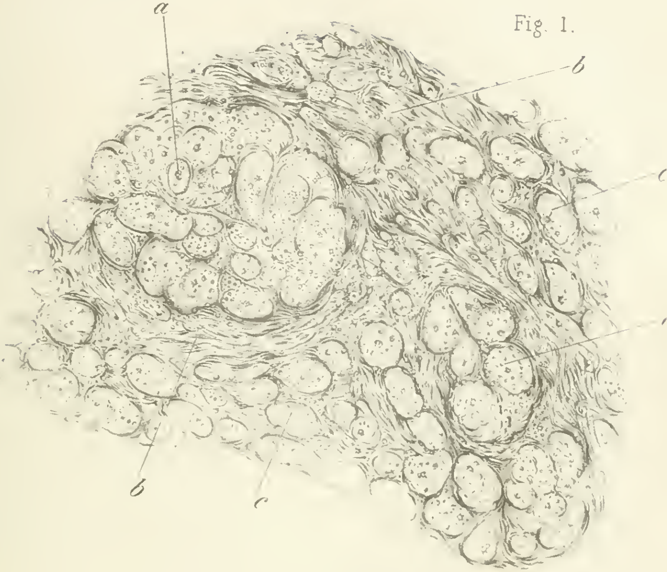
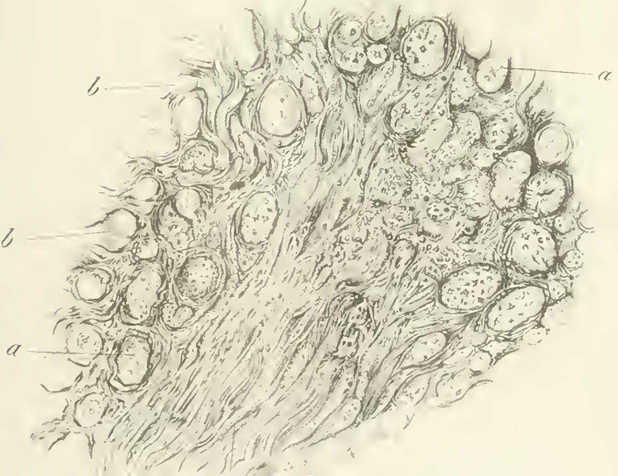


Fig 2.



ules, and the shell of the nucleus, lastly all granules of the protoplasm being uninterruptedly connected with each other, are formations of the living matter, while the fluid contained in the meshes of the network of the living matter is devoid of life.

The same author furthermore discovered that the apparently structureless basis-substance of the connective tissue holds a network of living matter, fully analogous to that of the protoplasm, which network being hidden in the basis-substance, if in a fresh condition or in simply preserved and hardened specimens, can be brought to view by different staining methods with nitrate of silver and chloride of gold. The living matter always comes to view within the basis-substance, whenever the latter is dissolved or liquefied by morbid processes, after which the basis-substance proves to be ordinary protoplasm.

As mentioned before, the myxomatous basis-substance of the decidua is formed by very small spindles; the interstices between these being traversed by delicate threads, which look exactly like those of common protoplasm.

In the fully developed decidua (fig. 2) the details in the structure are exactly the same as in the growing placenta, with one exception, viz., that multinuclear protoplasmic masses are absent; the meshes of the myxomatous basis-substance containing roundish protoplasmic bodies (fig. 2, *aa*), mainly devoid of nuclei, while numerous meshes, surrounded by a dense, highly refracting network of the basis-substance, look homogeneous and structureless. The basis-substance assumes, in the adventitial layer of the arteries, a decidedly fibrous structure, which again proves to be constructed by bundles of minute spindles, in the narrow and elongated meshes of which granular protoplasm is to be seen. The interstices between these spindles of the fibrous basis-substance are also traversed by minute vertical threads.

The history of the development of the basis-substance has always been a matter of careful study with our best histologists.

Now, the placenta offers an excellent means of settling several points of discussion, both on account of the relatively short time required for its formation, and the clearness of the relation between the protoplasm and the myxomatous basis-substance.

Virchow was of opinion that the basis-substance is a product of secretion of the so-called "cell," a somewhat simple doctrine, which has been entirely abandoned by the most advanced histologists since Max Schultze demonstrated that everything called basis-substance was originally protoplasm. Max Schultze's doctrine, that the protoplasm dies when transformed into basis-substance, however, is not in accordance with the fact that the basis-substance contains a considerable amount of living matter. In Max Schultze's theory, which in its essential points proves to be entirely correct, therefore one alteration is necessary, in accordance with the most recent and advanced theory of C. Heitzmann. This theory suggests that, whenever protoplasm is transformed into basis-substance, only the fluid and lifeless part contained in the meshes of the living matter undergoes chemical changes toward the production of a so-called basis-substance; while the living matter itself remains unchanged, and becomes invisible only on account of the refracting power of the basis-substance.

The manner of formation of the myxomatous basis-substance of the placenta is as follows:

Originally protoplasm is formed by the growing living matter, this being the essential formative material thoughout the organized world. The protoplasm appears in the shape of multinuclear bodies, exactly like those in developing bone or cartilage, where the so-called "giant-cells" prove to be the forerunners of the forming basis-substance. The next step is the formation of protoplasmic layers, in which nuclei are no more recognizable, while the network of living matter is arranged mainly in a longitudinal direction, viz., in the shape of closely-packed spindles. In the next stage, the fluid part of the protoplasm is transformed chemically into a shining, highly refracting basis-substance, which hides the living matter, this being demonstrable only in the interstices between the delicate spindles in the shape of minute grayish threads.

The most solid part of the basis-substance, as represented by the fibrous tissue of the adventitia of the arteries, originates in the same way as the myxomatous basis-substance of the stroma of the decidua. The only difference is that the groups, respectively the network of the living matter, are more elongated in the adventitial fibrous than in the myxomatous reticular tissue. In both instances the meshes hold a certain amount of unchanged protoplasm, which is relatively profuse in the myxomatous tissue and scant in the fibrous. Even in the latter tissue we find larger and more numerous protoplasmic masses in the decidua of the placenta advanced only to the fifth or sixth month of development, than in the decidua fully ripe for elimination from the maternal body.

THE RELATION OF MENISCHESIS TO PELVIC CONTRACTION.

BY
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THE noblest, most intricate, and greatest work of God is woman. She is delicately formed, and her every movement and entire development is moulded in the grace of delicacy. The name of *woman* is synonymous with all that is delicate, lovely, and of the earth glorious. Woman is a study. When she is to be considered as a divine creation, we look through and by her up to the Supreme Being. We see in her a wonderful piece of mechanism. She is formed individually for a destined purpose. The female child has very little in her bodily texture to distinguish her from the male. Perhaps we may see the inner delicacy in her features, but not often. She is as full-faced and adipose as her brother until she reaches the age of puberty. Then her limbs become rounder, her bones find a modelling, the breasts increase in size, and the whole system puts on a peculiar alteration. Then, when maturity is indicated by these visible signs, and by the organization of that peculiar phenomenon which has the name of menstruation, the child has become a woman. From her first menstrual flow the girl is more timid, embarrassed, gentle, and refined. Her voice is changed, and a vague expression of melancholy is breathed on her face. She has stepped across the bound, and is a woman, and all that is anomalous is lost in perfection. Nature makes her own evolutions, and brings to pass her will with care in the case of woman. The work is well done, and we find in the transition from maidenhood to womanhood food for admiration.

"Not every flower develops fruit." It is not the purpose of Nature to make every woman procreative. Exceptions are made to the great general rule. Some girls do not begin to menstruate at fourteen or fifteen, but the phenomenon develops three to six years later; while others never menstruate. Cases of females not menstruating until twenty or even twenty-five are on record. Müller speaks of four ladies who did not menstruate until they were twenty-three years old, and of five others who menstruated for the first time at twenty-five. M. Jourdan tells of a child of five having regular courses, and Lusewind knew a child of thirteen months who had regular menses. Carus mentions a lady who menstruated at two years, was pregnant at eight, and died at an advanced age.

A girl of fourteen may inaugurate her periods, and very often they become extremely irregular, occurring, instead of monthly, once in six or eight weeks, or, on the other hand, a few days in anticipation. Cazeaux has observed returns every fifteen days. Thirial mentions a girl of twenty-one, who menstruated in May, again in July, and never again.

Physiologically speaking, obstetrical writers distinguish between women who menstruate and then cease, and women who never menstruate. To the former condition is applied the epithet of *amenorrhœa emansionis*; to the latter that of *amenorrhœa suppressionis.* The practitioner recognizes in the first the state of "amenorrhea," but with it he may confound the latter.

It remains a mystery to men why some women are barren, totally incapable of becoming mothers; and there is scarcely less mystery about the irregularity of other women. By hygienic treatment, united with appropriate medicinal agents, as chalybeates, arsenic, sanguinaria, etc., physicians have brought about the regularity of menstruation. The woman feels that something is wanting, and though not physically weak, seeks to gain that phenomenon with which her fellow-women are gifted.

Nature plainly intended that some women should not be capable of child-bearing, and we have an exemplification of man combating nature in establishing menstruation. Man must not trespass, and trespassing, he is met by the antagonism of nature.

Dr. S. O. Vanderpoel says that "*no medicine* can cure amenorrhea." But uniting hygienic with medical means, we establish menstruation. We have in the eyes of the laity accomplished a wondrous thing—the barren is made capable of bearing. Her menses are regular, and appear perfectly normal in occurrence and quantity. She marries. Now mark the result. She becomes pregnant, but her labor, if it be at full term, is attended with difficulty; but more often there is danger of abortion.

Truly we have accomplished a radical cure of the amenorrhea, but we have succeeded only in making an *artificial* woman. She may apparently be able to bear children, but practically cannot. It is vain for man to work when nature sets up a strenuous opposition.

We wish to point to one noticeable fact which has rarely been attended to. *A woman who does not menstruate until after the age of twenty, does not, as a rule, have a natural labor.*

Why is this?

It is well known by all anatomical observers that, until the age of fourteen or fifteen, the pelvis of the female differs but slightly, if at all, from that of the male. About the time of female puberty, the pelvis in both sexes presents the general characters of the adult pelvis of the male. There is a certain massive compactness of the bones, and there is the same relative expansion. But so soon as the girl has her first menstrual flow, the pelvis begins to increase in size in every direction, taking on a depth and width that gives it a greater prominence. Enlargement of the inlet and outlet ensues, rendering the cavity more spacious, and necessarily giving the bones a lighter structure. The sacrum widens, and the sacrococcygeal articulation, binding the unossified bones, becomes more movable, and far less limited than in the male. In short, there is a general and gradual assumption of the shape peculiar to the adult woman. To render the woman perfect for child-bearing, the pelvic change is generally accomplished in a year to eighteen months. Some obstetricians hold that the pelvis reaches a stationary development in nine months. It is observable that no female children are born with perfect pelves that need no change, but that there ensues this change at the age of puberty. Of course, in such females as begin menstruating before the average age of puberty, that is, before the age of fourteen, the pelvic change occurs inevitably coincident with the assumption of puberty. It will be understood that the pelvic development is *always* synchronous with the inauguration of menstruation. There is an inexplicable connection between the menstrual phenomenon and the osseous change.

Now, in such girls who do not menstruate at fourteen or fifteen, that is, who are in a state of menischesis (*menes*, and *ισχειν*, to restrain), the pelvis does not undergo any change, but retains the form of childhood. It will be patent, therefore, to all that barren women have a male pelvis, so to speak, or, in other words, a contracted pelvis. The male pelvis would effectually prevent natural labor, and the same is the case with menischetic women. By the time that the girl reaches the age of sixteen, eighteen, or twenty, the bones of the pelvis have become firmer and the articulations are anchylosed. We take such a girl and put her under appropriate medical treatment, and our efforts are rewarded by the establishment of regular menses. If this change be brought about in a year after the time when menstruation should have commenced, the pelvis may, by an effort, acquire the development; but if, after the age of seventeen, at the utmost, nature has bound the bones together, and the development is impossible, the girl menstruates regularly, but her pelvis is, in point of fact, deformed.

Every accoucheur of experience has met, at the child-bed, with these cases of contracted pelvis. All agree that, when the smallest pelvic diameter does not exceed two and one-half inches, a natural delivery is impossible. "We have then," says M. Cazeaux, "only to choose between hysterotomy and a mutilation of the fetus." It is true that Depaul and others speak of delivery through a pelvis of two and one-fourth inches, but such cases are rare. We have a healthy, normal-shaped pelvis, and yet, unexpanded, it prevents delivery. The operation is to be performed on uncertainties; and facts show that two-thirds of the cases of gastro-hysterotomy are fatal either to mother or child or both. But we must so operate, for at any rate the mother and child will die if no operation be performed.

There is salvation of life, it is true, in inducing a premature labor, but it is not often that the physician has this phase of the case presented to him. The pregnant woman suffers no inconvenience, and knowing nothing of the state of her pelvis, permits her pregnancy to go on to the full term. When premature labor is suggested, it is by the near friends of the woman, rarely by herself. Premature labor, artificially induced, is attended with more or less uncertainty. This operation is generally performed at the lapse of seven months of pregnancy, for before that time the fetus is not deemed viable, and if later performed, there is danger of failure. It should always, however, be ascertained fully that the provocation of delivery is justifiable.

To illustrate our observations, we would cite the following:

Case.—Mrs. L. G., born of healthy parents; resident in a city; sedentary; slender, delicate, and chlorotic; in comfortable circumstances, and, excepting a chronic laryngeal affection, always healthy; did not menstruate at the usual age. Her mother, a woman of more than ordinary sense, forbade her marrying until she should have menstruated, and waited expectant for the inauguration of that phenomenon. Attaining the age of nineteen without having had her catamenia, she was then placed by her mother under medical treatment. Her medical adviser prescribed savine and iron, and the use of these medicines was successful. The lady menstruated at the age of twenty regularly, and six months after the establishment of her periods she married. Eight months later, she aborted in the seventh month of her pregnancy, in consequence of a fall from her carriage. Her health suffered, and she was not pregnant until two years later. The pregnancy went on to full term, and embryotomy was performed by the accoucheur. The mother recovered from the operation, and after seven years, having regained health, she was confined for the third time. Again the operation of embryotomy was found necessary. Cephalotripsy was performed by an accomplished accoucheur (now deceased, and widely known as an obstetrician), but the mother died during the operation. It was shown that her catamenia had been regular for four years, and that throughout her pregnancy she was in exceptionally good health. There was no trace of any rachitic malformation, either of the pelvic or any other bones of the body. The pelvis was well formed, and resembled that of the male. There was firm anchylosis, and perfect structure of the bones. The tabulated dimensions of the pelvis were as follows:—

Antero-posterior diameter of excavation......	3¼	inches.
Transverse " "	3¼	"
Antero-posterior diameter, superior strait......	3¾	"
Transverse " " "	3⅜	"
Symphysis depth..........................	1¼	"

It will be seen that this pelvis was not exceptionally narrow, and differed scarcely from that of the average male.

Many such cases might be referred to. Contracted pelves are not uncommon in occurrence. We never find them in females who began to menstruate before fifteen, and who had no trouble in menstruating. We observe such cases, on the contrary, in women who had been for a time menischetic, not menstruating until three or more years after the age of thirteen to fifteen, and who had been "cured" by hygienic and medical treatment.

The question now is, Can we relieve the menischesis in time to anticipate the arrest of the pelvic development? If we cannot remove this barrier to delivery, are we not culpable in permitting marriage and probable impregnation with its necessary perils? Would it not be better, far better, for the girl to go through life barren? In my opinion, the matter should be explained to the mother or female friends of the girl, and the precarious nature of the nominal success of any treatment be made plain. Let them decide and take the chances. We pay dear when we blot the book of Nature, and "we are found unhappily to fight against God."

ALBANY MEDICAL COLLEGE, Jan., 1878.

MECHANICAL TREATMENT OF UTERINE DISPLACEMENTS.

BY
DE WITT C. WADE, M.D.,
Holly, Michigan.

(With five woodcuts.)

ASSUMING that the diagnosis in a given case of displacement of the uterus is fully comprehended, and that the abnormal irritabilities of the genital organs that may have existed have been as much as possible allayed by proper treatment, and that direct or indirect discomfort is the result of the displacement, what relief can be obtained by the use of mechanical appliances? To answer the above question is the object of this paper.

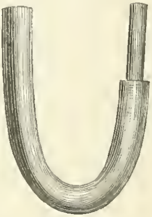
In the face of all the literature on the subject, and of the innumerable inventions that have been given us, it is generally believed that mechanical treatment is impracticable in the majority of instances, and the result is, that most physicians have abandoned the attempt to support the uterus artificially. It is pertinent to inquire into the cause of this failure, for upon theoretical grounds, and reasoning by analogy, we would be led to suppose that the reverse would obtain.

Let us first examine something of the character and surroundings of the uterus. Excepting the cervix and cavity, this organ can only be reached indirectly. The cervix is incomparably the most liable to injury and disease of any portion. It swings free from forcible contact with adjacent organs when the uterus is not displaced. Before pregnancy occurs, the uterus is normally somewhat anteflexed. It is not so securely fixed in its place that it cannot be temporarily much displaced in any direction without constituting an abnormality. The changes that are constantly occurring in the size and form of the bladder and rectum materially influence the position of the uterus. The vagina is an extensible tube, and is doubtless one of the uterine supports. The pelvic bones tend to give direction to the axes of the uterus and vagina. We should now be prepared to understand that the size, form, and relations of the normal pelvic organs may widely differ with individuals, and that their abnormal relations are not more arbitrary. It cannot be said, then, that the announcement that a patient suffers from a given displacement will convey clearly the impression to be obtained by him who makes the examination. The anatomical and pathological conditions are much too varying in different subjects to allow of a simple term being sufficient to explain the exact condition that exists. Nothing but a full description, including the form of the uterus and contiguous organs, and also exact or comparative measurements, can make it possible for one who does not examine the patient to comprehend the indications for treatment. This, I apprehend, is the reason that mechanical appliances have not proved successful. If we now concede that what has already been said is based upon fact, the only alternative in the treatment of uterine displacements is the construction of special appliances to be adapted to each individual case; not one for each well-worn cognomen relating to kinds of displacements, but one adapted to relieve the abnormal conditions found to exist, without regard to name. Although I do not say that no instrument now before the world may be used to advantage in the treatment of uterine displacements, yet I am positive that the percentage of failures is so great that the medical profession will never again adopt, except to a very limited extent, the use of ready-made instruments. What, then, will be done? I think it can be safely said that nothing is done in most instances, at the present day, for the class of diseases under consideration, that is, most women who suffer from uterine displacements pass through life without treatment.

Feeling the great need of a remedy, and believing that it must come through special appliances, I began a series of experiments in 1873 with reference to the accomplishment of this object. I naturally sought at the very first for material that could be made to take desired forms by simple means. In reality this was the great stumbling block. Nothing practical had heretofore been proposed to my knowledge. It is unnecessary to recite the details of my early experiments, but I will parenthetically say that I am quite sure that at present there are no other materials that will prove as satisfactory as those I shall propose. After having had a considerable experience in this direction, I read a paper on "Uterine Displacements" before our District Medical Society in March, 1874, in which I advocated the use of special appliances per vaginam, constructed of annealed brass wire No. 10, to be covered with rubber tubing. This paper appeared in *The Detroit Review of Medicine and Pharmacy* in February, 1875. The results of this kind of treatment have been so gratifying, and in such strong contradistinction to the results that can be obtained through the use of ready-made appliances, that I not only propose to discard the latter in practice, but to confine myself in this paper to the recommendation of instruments to be constructed in conformity to the indications in each individual case.

Judging from the past, I have no doubt we shall be able to continually improve upon the appliances I here present. The materials I now use for the supporter proper, are copper wire No. 9, and pure gum rubber tubing. This wire is pliable and can be readily shaped as desired, but it is sufficiently unyielding to retain its form while in use. I formerly used the common white rubber tubing as a cover, but its impurities give it absorbent properties which are objectionable, and it is not sufficiently durable. The pure gum is quite satisfactory. The tubing should be one-eighth inch internal diameter, with extra thick walls. Fig. 1 shows the wire and tubing full size. No oil should ever be applied to rubber goods, but glycerine may be used as a lubricant in applying the cover. A piece of cotton cloth between the rubber and fingers much facilitates the operation of covering. The ends of the tubing should be tied with black linen thread doubled and waxed. The tubing is to be applied after the instrument is formed.

FIG. 1

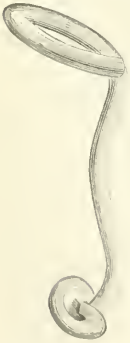


For convenience of description, the finished instrument may be divided into three parts, which we will call the base, the stem, and the summit. The base is made with reference to the attachment of rubber cords for the support of the instrument. It should measure about 1 inch by ½ inch, and turned to an angle with the stem as illustrated in figs. 2, 3, 4 and 5. The stem and summit will vary so much in form and dimensions, that I cannot forbear calling attention to the great necessity of minutely studying the abnormalities of the case to be treated. It is not enough to know that there exists a prolapsus, or a flexion, or a version. He who would treat a displacement successfully, must be able, from a digital examination, to correctly picture in his mind the contour of all within the sweep of his finger, with comparative measurements. If he now is able to distinguish the abnormal conditions present, and has tact enough to form an appliance in accordance with this detailed diagnosis, he will surely be rewarded by the ability to restrain a uterus prone to displacement. It must be understood, then, that in my description of the stem and summit of this special appliance, reference is only had to general principles, from which may be drawn a multitude of forms in accordance with the indications. The desirability of supporting the summit of a uterine supporter with a narrow stem hardly requires argument. By this means the vagina is distended longitudinally and not laterally, thus increasing the prospects of obtaining radical results.

The stem, to conform to the vaginal curves, must, from the base, have an anterior convexity, equal in length to the distance from the position of the base, outside of the vulva, to the commencement of the anterior concavity of the vagina. The second curve is an anterior concavity, and corresponds to the axis of the vagina, given it by the sacrum and bladder. Figs. 2, 3, 4 and 5 illustrate the curves of the stem. It is necessary that the tissues in the course of the stem should not be forcibly impinged upon. The length of the stem may be made to exact or comparative measurement.

The summit of the instrument is the most important to consider, and, according to my experience, it is the better plan to construct it first. It is the part that more particularly constitutes a special appliance. *Its form depends entirely upon the contour of the tissues to which it is to be applied.* We will first consider a displacement of the uterus, in which the axis of that organ is nearly on a line with that of the vagina. Clinical experience has shown that, in this case, the most feasible portion for the application of the summit of the supporter is in the utero-vaginal cul-de-sac; the instrument forming a ring that surrounds the intra-vaginal uterus. Fig. 2 illustrates this form of instrument. I desire to say here that many cases of cervicitis and endo-cervicitis are caused by prolapsus uteri: the weight of the womb, and whatever else presses it down, driving the cervix forcibly against the floor of the pelvis. We may learn from this, as well as by experiment, that it is not advisable to apply the summit of a supporter to the much-abused cervix uteri. The size of the ring and its inclina-

FIG 2



tion must depend upon the special diagnosis, remembering that the posterior wall of the vagina is longer than the anterior, the position of the cul-de-sac corresponding. No person, not familiar with the anatomy of the interior of the pelvis, as well as the pathology, can successfully treat uterine displacements.

It is reserved for displacements of the uterus in which the axis of the organ is quite out of line with that of the vagina, to most severely test the skill and ingenuity of the physician. The inclination may be of the whole uterus, or of the fundus only—the latter case, of course, constituting a flexion. In uterine flexions and versions, it is my belief that no other satisfactory treatment can be given than by directing the summit of the instrument against the fundus of the uterus. This must necessarily imply the intervention of the vaginal wall between the applied portion of the instrument and the uterus, for it is above the utero-vaginal juncture that the restraint is exerted. It is, therefore, fortunate for us that the extensibility of the vagina will permit of invagination of its superior portion, to a sufficient extent to accomplish the object. Before attempting to construct an instrument for the relief of a version or flexion, I desire again to call attention to the absolute necessity of the physician first obtaining a correct idea of the changes that have taken place, and the corresponding indications of treatment. It is not enough to know that version or flexion exists, and that the uterus is tilted to the right or left, but it is necessary to know in what form the summit should be constructed to conform to the contour of the part to which it is to be applied, as well as the length of stem required to accomplish replacement. I consider the application of the term degree to a uterine displacement as altogether arbitrary, and capable of conveying varying and unreliable impressions, for the reason that, in practice, it is found that normal and abnormal positions of the uterus are far from anything like the precision that is necessary to construct a rule. From these general remarks it will be seen that prescribed forms for the construction of the summit of the instrument for the support of the fundus cannot properly be given, but a general plan is here given, from which original deviations must often be made. Fig. 3 shows an instrument designed to replace and retain in place a posterior flexion or version. Fig. 4 gives the form of an instrument applicable to the reduction of a fundus displaced anteriorly. It often occurs, particularly in anteversion, that the fundus is found lower than the neck—in fact, that the cervix is not within the reach of finger or speculum—in which case the summit of the instrument would slide from the fundus to the neck and thus aggravate the difficulty. This can best be remedied by carrying the wire forward 2 or 3 inches and returning it again to the base, forming a triangle, the anterior side of which is 1 to 1½ inches broad as in fig. 5. By this means the summit can be fixed at any desired point. I have never known of any other instrument that is not baffled by such a displacement.

FIG. 3

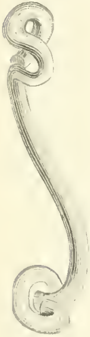


FIG 4

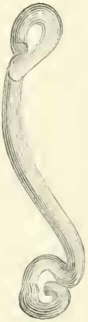
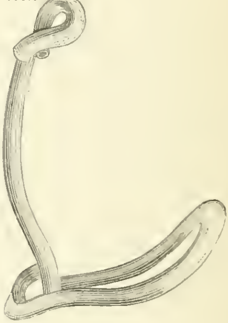


FIG. 5



The ultimate support of the uterus, when the instruments I have described are used, is upon flexible cords or tubes passing through the base, and attached at their extremities posteriorly and anteriorly, 6 or 8 inches apart, to a belt which is to be fastened loosely around the waist. This belt answers the purpose well, made of two thicknesses of cotton cloth, 1½ to 2 inches wide when completed; or, what is less trouble to prepare, boot-strap webbing may be used. It will be found more comfortable to apply the belt loosely above the crest of the ileum than tightly below it. The supporting tubes should be $\frac{3}{16}$ inch in external diameter and of good material. They can be securely fastened by tying a single knot in a loop in the lower border of the belt.

I attach much importance to the fact that, when the instrument is completed, it may be still more perfectly adapted to the case through the pliability of the wire used in its construction. A case should by no means be abandoned because the first instrument devised for it failed to succeed. A new instrument may be made more nearly perfect by a comprehension of the faults of the first.

The dimensions to be given the instrument may be determined by actual measurement, or, what I consider more convenient, by comparison. The following is my plan, and I think a suitable one to adopt, for recording all of the dimensions of the appliance. I use the figures 1 to 5 inclusive as comparative measurements, 1 and 5 being the extremes and 3 the medium. By using fractions, the shading can be made quite perfect. I first make a simple rough design, in pencil, of the form of instrument needed, after having completed the diagnosis, and then re-examine for dimensions, and mark each part of the instrument accordingly. For instance, the case is one of uncomplicated prolapsus uteri. The form of the instrument will be something like fig. 2. We will suppose, after careful examination, the parts of the instrument are numbered as follows: diameter of ring, 3½; obliquity of ring, 3; stem, 2½; stem curvatures, 4; base 2. If one who had not seen the case was to make the instrument from the figures, he would understand that 3 is the average, and that 1 and 5 are the extremes. With a little experience, the size and form of each portion of the instrument can be accurately produced by this method of comparison. As a convenient standard, all parts of each illustration in this paper represents the medium size, or 3, reduced one-half. Therefore, any dimension multiplied by 2 will give what my experience places as a medium. It will be found that often, in any variety of displacement, it is advantageous to use a moderately short stem at first, and afterwards to increase its length, as the organ becomes accustomed to the restraint. Radical cures are more likely to be effected after the use of a long stem. Artificial supports cannot generally be worn comfortably until uterine inflammations are subdued, but it will be found sometimes necessary to raise a fundus before an inflamed cervix can be reached. It is also frequently necessary to raise a uterus before inflammation of the cervix can be entirely removed, when this disease is caused or aggravated by prolapsus.

Any foreign body, of whatever material, allowed to remain within the vagina, will increase the mucous secretion from the lining of that organ, but when inflammatory action is not present, the amount of the discharge will be inconsiderable.

Uterine displacement, accompanied by non-inflammatory hyperesthesia, is generally the most troublesome complication with which the practitioner has to contend. Its treatment must be based upon a recognition of the fact, that the exalted sensitiveness of the genital nerves is produced primarily by the displacement, and that to relieve the latter, will ultimately bring relief to the irritated nerves. A supporter of a minimum size first, to be replaced by gradually increasing sizes, as fast as they can be comfortably borne, will, I am quite sure, prove very satisfactory.

It is the result of my observation that a large proportion of women suffer from uterine displacement, and that young ladies are not less prone to these diseases than are matrons. It is further observed that many consecutive diseases are banished upon the removal of this their cause; and I wish to impress upon all the absolute necessity of giving the uterus particular attention in all cases where it may be supposed to be implicated. This should not from morbid delicacy be less the case with virgins; and he who follows my advice will be surprised to find what is the underlying stratum upon which most female complaints are based. A successful management of the displacements of the uterus means work, gratitude, profit.

I obtain my rubber tubing from the Tyer Rubber Co., Andover, Mass.

IMPROVED VAGINAL TOUCH.[1]

BY
EUGENE C. GEHRUNG, M.D.,
St. Louis.

BEFORE entering upon the description of this method, I shall, for the sake of comparison, give a synopsis of the vaginal touch as hitherto practised and described. Thus:[2]

"The index finger of one hand being introduced into the vagina . . . the cervix should be examined with reference to location, size, and density. This being done, the finger should be slid along its posterior surface into the recto-uterine space, and the presence of any hardness or tumefaction there noticed . . . This space being explored, the finger should then be passed anteriorly, and swept upward and forward along the base of the bladder toward the symphysis pubis, etc. . . .

"One maneuvre, by which touch of the parts lying closely in contact with Douglas' cul-de-sac is much facilitated, still remains to be mentioned. Where small tumors exist behind and disconnected with the uterus, or where enlarged or prolapsed ovaries are to be sought for and examined, an excellent result is often obtained by placing the patient in Sims' left lateral position, and passing the index and middle fingers of the right hand as high up as possible, their palmar surfaces looking toward the posterior wall of the vagina. By this method I have repeatedly detected enlarged and slightly displaced ovaries, which in the dorsal decubitus had entirely escaped observation."

Throughout gynecological literature I find the description of the vaginal touch essentially the same as the foregoing. Therefore I shall not add more quotations.

The information gained by this procedure, without the assistance of conjoined manipulation, rectal or vesical explor-

[1] Read before the St. Louis Obstetrical and Gynecological Society, June 20th, 1878.

[2] Thomas on the Diseases of Women, p. 61 et seq.

ation, is very unsatisfactory, and yet there are many cases where none of these auxiliaries can be used. In such cases, and as a substitute for the ordinary vaginal touch, I use the following maneuvre wherever applicable:

The patient being placed in the dorsal position on a table (prepared as usual), the heels touching the outer side of the nates, and the knees separated as far as possible, to shorten the depth of the perineum, introduce two fingers if possible, and make out the probable diagnosis as by the ordinary touch. This should be well recorded mentally. Then, by elevating the cervix, *so as to increase or exaggerate the probable deviation of the womb*, sustain it (the cervix) in that exaggerated position by one finger and let the other feel about in the direction where the fundus is supposed to be, according to the previously-made diagnosis, plus the increased deviation.

For instance, suppose that the cervix is tilted up in the posterior vaginal fornix; if you elevate it still higher in that direction by one finger, the other or searching finger will reach the now considerably depressed fundus with great facility in the anterior fornix, if anteversion be present; if no such tumor is found in that locality, it cannot be anteversion, but probably it is a retroflexion. If now the cervix is pulled forward and elevated toward the anterior fornix as high as possible, the fundus uteri will descend posteriorly to within easy range of the free or examining finger, and the whole posterior wall can now be touched with great facility from os to fundus, and the degree of flexion determined by the depth and position of the sulcus between the neck and body.

On the other hand, suppose the cervix pointing to the symphysis pubis, elevate it still higher toward the anterior fornix, and if you have to deal with a retroversion, the corporeal tumor wiil soon appear within reach of the unemployed finger, and the posterior wall of the womb is offered for convenient examination, when the size and shape, the presence or absence of tumors may be easily recognized.

If, under these circumstances, the tumor (the body of the uterus) should fail to make its appearance, then you have in all probability an anteflexion before you. By elevating the cervix now into the posterior fornix, the fundus will be pushed down between the symphysis pubis and the examining finger, when the anterior wall is as completely exposed to exploration as in the previous case the posterior. Length and breadth of the organ, position and degree of flexion, sensibility, and presence or absence of tumors, can without difficulty be recognized. More than that, the thickness of the organ can also be defined, since the uterus is fixed between the finger and the sacrum on the one hand, and the finger and the pubes on the other. The distance of these fixed points from the finger need not be guessed, but may be accurately measured by alternately touching the body of the uterus, and by the sides of it the pubes or sacrum, as the case may be.

In anterior displacements, it is of great advantage to enlarge the pubic resistance by the application of the free hand to the hypogastric region, even if the abdominal walls are too thick for conjoined manipulations.

There are cases of retroversion which cause considerable inconvenience to the patient, and yet will generally escape detection, because they are temporarily rectified as soon as the finger or the speculum is pressed into the posterior fornix. Nevertheless, this deviation may be easily recognized, by simply pushing the uterus by one or both fingers applied against the os in the direction of the promontory of the sacrum. If retroversion is present, the movement is quickly arrested by the fundus uteri striking against the promontory. If there is no resistance offered, retroversion may almost positively be excluded, because the deviation of the womb is then insufficient to let the fundus reach below the promontory of the sacrum. A deviation of the uterine axis that does not throw the fundus below the promontory cannot be regarded as a retroversion, although predisposing to it.

These exaggerated malpositions enable us frequently—besides the advantages just explained—to investigate the Fallopian tubes and the ovaries (whether prolapsed or not), which are brought within easy range, and which, resting on one side against a resisting medium (the sacrum or pubes), can be palpated or examined much more thoroughly than when floating among the intestines.

Early pregnancy in suitable cases can be diagnosticated much easier than by the usual methods, and we may frequently be enabled to state with certainty, that, if pregnancy exists at all, it is intrauterine, and possibly also an extrauterine fetation may be recognized with greater facility than by the usual means.

This mode of touch is not applicable, or, at least, does not give such satisfactory results in all cases, but it has the advantage that it does not preclude any other mode of examination from being used, either in conjunction or subsequently, and that it neither injures nor hurts the patient, and needs no preparation nor anesthesia. Further, that it can be used where all other modes may be inapplicable, and that it is not more objectionable than the simple vaginal touch.

Rudeness in this as well as in any other kind of manipulation is to be highly deprecated.

In the presence of acute pelvic inflammatory diseases, extensive inflammatory adhesion, implication of the uterus or appendages in large tumors, or advanced pregnancy, this maneuvre is either inapplicable or without advantage. It would appear à priori inapplicable in virginal patients, where but one finger can be introduced, but with practice that one finger may be taught to execute, to a greater or lesser extent, the whole maneuvre.

It may be objected against this method that the uterine deviations diagnosticated by it are also caused by it. But if you bear in mind that the probable position is made out beforehand and mentally recorded, this serves merely as corroboration or contradiction of the previous impression.

It may also be supposed that this necessitates a prolonged examination, while, on the contrary, it saves time.

In those cases where abdominal palpation is unsatisfactory or impossible, on account of the presence of abdominal dropsy or large tumors, by the means under consideration we may frequently be able to decide positively whether the womb is or is not implicated in the tumor, and whether there is or is not a probability of pregnancy complicating it. If it can be turned over, more or less completely, and examined, it may be conclusive evidence that it is not implicated, and that there is no advanced pregnancy present. If it is not applicable in all cases, it simply shares this defect with all other methods. When applicable, it may give as good information as the rectal exploration or the vesical touch, without the inconveniences and disadvantages of these. The finger is separated from the object to be examined only by the thickness of the vaginal wall.

To avoid being misunderstand, I shall state that I do not offer this plan of examination as a substitute for either of the older methods, but simply as an addition to the usual means of diagnosis.

HYPERMASTIA AND POLYMASTIA IN THE FEMALE,[1]

WITH REMARKS ON THE ETIOLOGY AND TREATMENT OF MASTITIS.

BY
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There is a great difference in the size of different women's breasts. At the age of puberty, the breasts of girls are small, hard, and hemispherical, but later in life, when they become women, and pregnancy occurs, their breasts enlarge and hang loosely from the thorax. In order to make the breasts appear full and of a beautiful contour, various kinds of padding are used by some women. In old women, the breasts are flabby, knotty, and wrinkled, and in very old age they almost disappear. Through their own weight, or by being drawn out, the breasts may become so much elongated that women can nurse their children over their shoulder or beneath their arm. Indian squaws and Hottentots carry their children on their backs, and let them nurse in this position. Lithgrow also relates that the women of North Ireland nurse their children in the same way.

The ancient Romans did not look upon large breasts as beautiful, and the corsets were originally invented for the purpose of preventing the growth of the breasts. In ancient times, those breasts were alone considered beautiful which could be covered by the hand. Ovid, a man of vast experience, and versed in the knowledge of female charms and

[1] Read before the Cincinnati Obstetrical Society, March 14th, 1878.

beauty, had a horror of large breasts, and said "Mammosam metuo, teneræ me trade puellæ;" "I fear a big-breasted woman, but give me a tender young girl." Among European women, the Portuguese have the largest breasts; the Castilians the smallest. A strange fact that has long been noticed is, that women living in a damp and swampy neighborhood have larger breasts than those living in a mountainous or dry country. According to Rubens' portraits of nude Belgian women, they have as large breasts as the Portuguese. Professor Hyrtl says it has always appeared strange to him, upon examining the pictures of an art gallery, to find the portraits of goddesses and Madonnas of the master painters representing these ladies as large as Belgian milk maids. He adds, "He deeply sympathizes with the angels of heaven who must carry around goddesses of such size and weight."

Austria, according to one of the poets, occupies a very distinguished position with regard to the breasts of her women. This poet, in describing his dulcinea, speaks of various parts of her body coming from different countries. He says:

> "Den Kopf aus Prag, die Füss' vom Rhein,
> Die Brüst' aus Oesterreich im Schrein,
> Aus Frankreich den gewölbten Bauch."

Jean Borel relates the case of a girl whose breasts each weighed thirty pounds, and in the museum of the Vienna University a monstrous breast is preserved, weighing thirty-two pounds.

The integument covering the breast is thin and soft, and near the nipple the subcutaneous veins are transparent. The elasticity of the integument allows the breast to be drawn out considerably, and Valentine Hildebrandt relates a very interesting case, in which a girl allowed her lover to suck her breasts, and the feeling occasioned was so delightful, that she used to draw the breast out herself, and she continued this manipulation so long that she was finally able to suck her own breast.

There are a number of cases related where more than two breasts were present upon the same woman. If more than two are found, the third one is generally situated in the sternal region.

Where polymastia exists, the number of breasts present is generally three or four. It was formerly supposed that three breasts occurred oftener than four; but upon examining the records of such cases, it will be found that four breasts have been present in fully as many cases as three. There is but one case upon record where five breasts were present.

Position.—There is a case related by Robert, in which the supernumerary breast was situated upon the outer part of the left thigh, and a few inches below the trochanter. Monsieur Jussien[1] once saw a supernumerary breast in the inguinal region. Sannois[2] says a monk of Carbie saw a female peasant with four breasts, two of which were situated on the back. In women who have four breasts, the supernumerary ones are situated most frequently in the vicinity of the axilla. According to Hyrtl,[3] if a woman have three breasts, the third one is generally situated in the sternal region. Dr. Sneddon[4] states that the third breast may be situated on the left side, near the axilla, under the normal one. In the case in which five mammæ occurred, two were placed symmetrically on either side of the chest, and the fifth was situated on the median line, five inches above the umbilicus.

Women in ancient times desiring children were accustomed to worship at the shrine of the goddess Isis. Statues of Isis represent her as having a number of breasts. She was called the goddess of fecundity. It was supposed that women in ancient times gave birth to children having supernumerary breasts from the fact that they worshipped so much at the shrine of Isis and gazed so much at her statues. It is said that the mother of Alexander Severus, on account of having had a supernumerary breast, was called Julia Mamea. Percy[5] is of opinion that the number of breasts is not proportioned to the number of young, but St. Hilaire thinks that "amongst mammals there exists in almost all species a remarkable relation between the number of mammæ and the number of young which are born in the same litter. This relation would lead us to think that the existence of supernumerary mammæ in women would portend for her multiple accouchement." M. Tripier[1] thinks there is almost always a perfect concordance between the number of mammæ and of the individuals composing the litter, in order that each of them may easily find its nourishment. Some multimammic women have imagined that they might have more than the usual number of children at a birth, and M. Percy relates the history of a rich and beautiful heiress who had four breasts and had this fear. She married only after having consulted a physician at Basle and the Faculty at Tübingen. They assured her she would have accouchements like other people, and this opinion was confirmed. If this case had been decided differently, it would have taken away the name and posterity of one of the best houses in Switzerland. St. Hilaire states "he cannot conceive how the increase of the number of mammæ—an anomaly which modifies in no way the conditions of the essential organs of generation—could become the cause or even the indication of an extraordinary fecundity, and we see, besides, each year some women who have, as ordinarily, only two breasts, confined with more than two children. Amastia and polymastia, it would seem, are hereditary, according to the observations of the following authors. M. Robert[2] saw a daughter whose mother was multimammic, and Dr. Bathurst Woodman[3] saw a mother, upon questioning whom he found that her eldest daughter, whom he saw, had also three nipples. Dr. Lousier mentions the case of a lady wanting a mamma, who transmitted this vice of conformation to her daughter. Lastly, this abnormality was seen to occur, by Dr. Handyside,[4] on two brothers, and this would seem to point to a hereditary origin, though it did not exist, so far as known, on the bodies of either of their parents.

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[1] Lancet, xii., 618 Philomatic Society.

[2] Dict. des Sc. Méd., T. xxx., p. 376.

[3] Topographische Anatomie, Band i., p. 596.

[4] Glasgow Medical Journal, vol. x., p. 72, from which journal I have drawn largely in writing a part of this article.

[5] Histoire des Anomalies, T. i., p. 710.

It might be proper, at this part of my paper, to speak more in detail of the various cases of polymastia which have occurred in females. The case in which five breasts occurred, and which has been referred to, was seen by M. Gorre, and described by M. Percy.[5] The woman was a vivandière, and was taken prisoner in 1808 by the French army. She died soon afterwards of hunger and cold. Four of the breasts were prominent and full of milk. Each breast had a long nipple and was surrounded by a dark areola. The fifth breast was quite small. There is a curious case in which four breasts were present, two being placed symmetrically on each side of the chest. She had also a peculiar projection, something like a cow's tail, which is stated by St. Hilaire to have been placed in the median line, lower down and between the lower breasts. J. F. Lynceus states that he went from curiosity to see a Roman woman who had four beautiful breasts, ranged one above the other in a regular manner. Dr. Gardeur[1] relates a case of a little Mulatto girl, called Aglæ, aged nineteen years, a native of Cape François, the daughter of a white and negress, who had four breasts, the two supernumerary ones being in the arm-pit. P. Shannon[2] reports an interesting case: "Annie Merriman, aged thirty-four years, was delivered of her sixth child. Soon after her accouchement, the attendant informed me that this woman had four breasts, and that they all contained milk. I found the nurse's statement to be perfectly true. The supernumerary breasts are placed one on either side, very near the margin of the axilla, and are about the size of a large goose egg, or one-sixth of the true breasts, which in this woman are largely developed. Their position is such as to interfere with the motions of the arms. The right supernumerary breast has two nipples. The milk flows from both breasts at the same time. From some superstitious feeling, this woman could never be prevailed upon to nurse any of her infants at the smaller breasts. None of her relatives present this anomalous condition. She says the supernumerary breasts were first discovered about the period of puberty, and that they have always enlarged in proportion to the true breasts during pregnancy and lactation. When she stops nursing, they speedily diminish in size."

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[1] Dict. Ency. des Sc. Med., T. xiv., p. 371.

[2] Jour. Génér. de Méd.

[3] Tran. Obstet. Soc., Lond., Vol. ix., p. 50, 1868.

[4] Journal of Anatomy and Physiology, vol. vii., 1873.

[5] Dict. des Sc. Méd., T. xxxiv.

The very abnormal cases which had the mammæ on the back need only be mentioned. Bartholin[3] relates that he saw a Danish woman with three breasts, the supernumerary one forming a triangle. G. Hannœus[1] wrote July the 1st, 1675, to Olaüs Borrichius that he made a visit to a lady who had three breasts of a very beautiful form, all giving milk and disposed in the same line. M. Percy saw one of the most beautiful women of Treves, the mother of three fine children, who presented this conformation. Anne Boleyn, the wife of Henry VIII., is said to have had six toes and three breasts. She was considered the most beautiful woman of her day, but it is related that Henry VIII. became disgusted with her, owing to these deformities, and therefore procured a divorce. Perhaps the most remarkable case of polymastia on record is that spoken of by Robert. He says "A woman nursed her child for fully three years from a nipple on her thigh. The child, after it learned to walk, was accustomed to creep under its mother's clothes, and nursed while standing."

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[1] Dict. des Sc. Méd., T., xxxiv., p. 525.

[2] Dublin Quar. Jour., vol. v., p. 266-7.

[3] Epist. Centurie, iv., p. 218.

Causes of inflammation and abscess of the breast.

When we consider the marked and rapid increase of the size of the breasts which takes place immediately after a woman is delivered, and the large amount of blood that flows into the breasts at this time, it really seems strange that inflammation of these organs does not oftener occur. There are various causes of inflammation of the breast, and among these may be enumerated cold, irritation of sore nipples, searching of the child for milk, over distention of the breast from retention of milk, the unskilful use of a breast-pump, rubbing the breast, and scrofulous constitution. There can be but little doubt that exposing the breast to the influence of cold air is sometimes a cause of inflammation. Prof. Hebra, of Vienna, scoffs at the idea that a person may take cold at all, and says, if we inquire carefully into the cause of pneumonia, or any other inflammation, we will find that "catching cold" was not the real cause of the inflammatory trouble. At one of his lectures, he related an incident bearing on this question, which deserves repetition. A young girl consulted him, who said she had taken cold by sitting on a cold stone. Hebra disbelieved her story, and came to the conclusion that she was *enceinte*. The later history of the case confirmed his view, and he was convinced that warmth had more to do with her trouble than cold. The irritation of sore nipples is a frequent cause of inflammation of the breast, and for this reason they should be well treated. The searching of the child for milk may also be laid down as a frequent cause of mammary inflammation. When we consider the rough manner in which children push their heads against the mother's breast, and the way they pull at the nipple, we are certainly justified in enumerating this as one of the causes of mammary inflammation. The over-distention of the breast from retention of milk was formerly regarded as almost the sole cause of this kind of inflammation, and the teachings of Puzos on this subject have left an impression that may not be erased from the minds of all in our profession for many years to come. It cannot be denied that this is sometimes a cause of the inflammation, but it is not as frequent a cause as the unskilful use of the breast-pump is. The able teachings of Dr. McClintock have thrown light upon this subject. He has pointed out the fact that the accumulation of milk in the breast does but little harm, and if the breast is really over distended, the milk flows out naturally, and without the aid of a breast-pump. It cannot be denied that the scrofulous constitution has something to do with mammary inflammation and abscess, as it has been noticed repeatedly that women of this constitution are more liable to this inflammatory process than other women, and that they are repeatedly attacked with this form of trouble. Mr. Bryant has pointed out the fact that nursing women, of course, are attacked oftener with inflammation of the breast than any other class of women. He says on this point, "Out of 102 consecutive cases under my observation, 79 occurred during lactation, 2 during pregnancy, 21 in patients who were neither suckling nor pregnant. Three-fourths of the cases that occured during lactation attacked patients during the first two months."

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[1] Bartholin's Hist. Cent., iv., Ob. 38.

Inflammation may attack the subcutaneous tissue, the glandular tissue of the breast itself, or the tissues between the breast and the chest wall. An abscess may follow either of these three kinds of inflammations, and such abscesses are named by Sir Astley Cooper *abscessus subcutanei*, *parenchymatici* and *submammarii*. Inflammation of the breast during the first twenty-four hours of its existence may sometimes be aborted by the use of a saline cathartic, a diaphoretic such as ipecacuanha, the administration of large doses of quinia, and by the application of cold water and leeches. Rubbing the breast with the hand should certainly be condemned. Sometimes the application of camphorated oil with a slight addition of laudanum has a very pleasing effect. If, after using these remedies for forty-eight hours, no relief has been obtained, it is then better to discontinue all such treatment, and begin the use of warm poultices. After pus has formed, it is better not to open the abscess too soon, but let it "get ripe." The abscesses formed in the subcutaneous and in the glandular tissue of the breast heal very rapidly after being opened, but the abscesses formed in the tissues between the breast and the chest-wall are difficult of diagnosis and difficult to cure. These latter abscesses are frequently followed by fistulous tracts and openings; the late Dr. Parry condemned the practice of laying such tracts open, on account of the large amount of tissue that had to be cut through, and preferred to treat such cases with injections of carbolic acid and the application of solid nitrate of silver. I shall close this article by giving the history of two cases of this kind, in which Professor Billroth, of Vienna, used the knife, and with most marked success, in opposition to the teachings of Parry. The cases that I am about to relate I had the pleasure of seeing Professor Billroth treat at his clinic in 1874. Both patients were under treatment at the same time, and both were afflicted in the same manner. They had been under the care of a physician before their admission to the hospital, and the attending physician had opened the abscesses on several occasions. An immense amount of pus issued from these abscesses daily, and injections of various kinds had been tried, but without success. Billroth reopened the abscesses, and for several weeks attempted to relieve the disease by injections of carbolic acid, and by the use of solid nitrate of silver. Failing with all these remedies, he then placed each patient under the influence of chloroform, and cut deeply down to the deepest portion of the abscesses, and connected the several fistulous tracts with one another by incisions. The cuts made in both cases were deep and wide; so much so, that Billroth introduced his whole hand into the incisions, and cleared out the contents of the abscesses with his fingers. The abscesses were then washed out, and filled with lint saturated with a solution of carbolic acid. This lint was changed once or twice daily, and at the same time the abscesses were well washed out. The rapidity with which these abscesses and fistulous tracts healed was really remarkable. It was not perhaps more than three weeks after the incisions had been made, until the breasts were entirely healed. After seeing these two cases treated so successfully (no difference how severe the treatment may seem), I am convinced it would be well to pursue the same line of treatment in similar cases.

A CONTRIBUTION TO THE PATHOLOGY OF PUERPERAL ALBUMINURIA.

BY
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Albuminuria in pregnancy is usually associated with puerperal convulsions; but my experience teaches me that eclampsia, although the most startling effect of uremia in pregnancy, is by no means the principal one. In the last few years, a class of cases of albuminuria in pregnancy has come under my observation which manifested no tendency to eclampsia, but was attended with a train of symptoms as threatening to the life and health of the patient as puerperal convulsions would have been.

The most prominent and constant symptom of these cases was dyspnea, commencing from the third to the sixth month of pregnancy; usually slight at first, observed upon ascending a flight of stairs or active exercise, gradually increasing in severity as pregnancy advances, until it resembles a severe paroxysm of asthma. Generally the patient becomes anemic and prostrated in strength, affording the system but little power to withstand the shock and burden of labor. Usually toward the last, when the dyspnea becomes severe, there is a constant cough, sometimes attended with a pneumonic or bloody expectoration, owing to hypostatic congestion of the lungs and pulmonary vessels, probably caused by edema of the lungs, and effusion of serum into the pericardium, impeding the action of the heart. Swelling of the feet and puffiness of face and eyelids, the more common precursors of puerperal convulsions, are slight or less noticeable.

CASE I.—I was called March 15th, 1875, to Mrs. S., thirty years of age, in a miscarriage, in about the seventh month of pregnancy. She had previously born five healthy children, carrying them to a full term. I found her in labor, and gasping for breath, surface cold, and bathed in perpiration; pulse fluttering and intermitting. She was soon delivered of a live child which died in a few hours. She lost scarcely any blood at the time of delivery; she was excessively pale and anemic; she had no disease of the heart; urine highly albuminous. Her recovery was slow. The albumen diminished gradually in her urine, but never wholly disappeared. She had slight swelling of the feet and puffiness of face and eyelids. A few months after, she again became pregnant. About the fourth month, alarming paroxysms of dyspnea set in. She again became pale and anemic. About the sixth month she was delivered of a still-born child. Her condition at the time of confinement and her subsequent recovery were about the same as the first. In the winter of 1877, she again became pregnant. Her pregnancy was attended with the same train of symptoms, but somewhat more aggravated in character. Several days before her miscarriage, which occurred about the sixth month, she had frequent paroxysms of dyspnea attended by a constant cough and bloody expectoration. She was unable to resume a recumbent posture during the paroxysms, which were frequent or almost constant. During her labor, which lasted three hours, the cough and bloody expectoration became excessive, but subsided completely as soon as the child was born.

Her recovery this time was more rapid than it had been after her previous miscarriages. She has now become fleshy, and can attend to her household duties without fatigue. The last time I tested her urine, there was a slight trace of albumen found in it.

CASE II.—January 16th, 1877, I was called to visit Mrs. G., twenty-four years of age, in her first pregnancy, her last catamenia appearing some time in October previous. She was suffering from a severe paroxysm of dyspnea; unable to lie down; she had been troubled with shortness of breath during two or three weeks back, which was aggravated by going up a flight of stairs or by active exercise; albumen in urine, and slight swelling of the feet, but no puffiness of face or eyelids.

She attributed her suffering to a slight injury she had received a few weeks previously. I again saw her on the 21st. Her symptoms were greatly mitigated. She, soon after, left the vicinity, and I did not again see her until the 13th of May following. She had been suffering from a severe attack of dyspnea during two or three days previously; had been treated by a physician in the neighborhood for asthma, which she said had increased her distress. Her breathing was extremely difficult and labored, attended with a constant cough, no expectoration. An auscultation revealed slight congestion of one of the lungs; lips and surface of body cyanosed. She was unable to lie down, and rested with her head and chest leaning forward supported by a pillow; pulse 120. She got relief and slept some during the night and could lie down. No organic disease of the heart. She had occasional attacks of dyspnea, but not quite as severe as heretofore, until the day before her confinement. May 17th, she was taken in labor, which terminated in about three hours, without any distressing symptoms occurring, in the birth of a dead child. As the perturbing cause was removed, and the patient was more comfortable than I had before seen her in her late illness, I thought the danger past. About four hours after I had left the house, I was again summoned to her bedside in great haste; I found her in a most distressing paroxysm of dyspnea, the surface of the body was cold and livid; pulse fluttering and intermitting. She died within an hour.

The above cases had no noticeable cerebral disturbance, nor any tendency to eclampsia, during their illness. The symptoms of the following case were more varied and complex, and in its progress the dyspnea disappeared, and was superseded by other symptoms, the results of uremic poison.

Case III.—I was consulted in my office, January 7th, 1878, by Mrs. —— 36 years of age, several years married, but never pregnant. Her last catamenia appeared in August previous. She had been troubled with shortness of breath during two or three weeks past; save that, and considerable distress from flatulence or distended bowels, she was in good health. Appetite was good, complexion clear and healthy. The abdomen, when not increased by distended bowels, was the size of a person four months gone in pregnancy. She was certain in her own mind that she was not pregnant, and would not listen to or tolerate any opinion favoring that idea, as a solution to her difficulty. I was again consulted by her in my office, on the 18th of March following. Her general appearance was about the same as in January, but, in addition to the shortness of breath, which had not increased in severity, she complained of noises in the ears. She was still firm in the belief that she was not pregnant. March 26th, I was called to visit her at her residence. She then complained of dimness of vision, saw sparks and bright flashes before her eyes. The tinnitus aurium had disappeared. She had just discovered that her eyesight was failing her in the performance of her ordinary domestic duties. She found it difficult to thread her needle, or see to sew; objects were indistinct and confused. Her general health had begun to suffer; pulse 110; had slight swelling of the ankles; urine was scanty, dark-colored and albuminous; tongue was coated, but she was troubled less with flatulence. Her complexion began to assume a waxy appearance. Upon examination by auscultation, I felt an occasional slight impact against the abdominal walls, but could not detect the pulsation of the fetal heart. Dr. C. C. P. Clark was called to visit her in consultation with me, March 28th. Vision had become more impaired, pulse 120, small and thready; complained of heat and pressure in the back part of the head, and flashes of light before the eyes; her mind at times was disturbed with illusions. I had directed ice to be applied to the nape of her neck in a rubber bag which had given great relief in quieting the excitement of the brain. She would sink into a quiet sleep soon after its application. The plan of treatment adopted and pursued till the end was absolute rest, to secure which a camphor and opium pill, 1 gr. each, was given every eighth hour; her bowels to be kept open with Friederichshall bitter-water, which she had been in the habit of using during many years for that purpose; bromide of potassium and acetate of bi-carb. potass. were administered to meet indications. Her urine soon became abundant and clear, and the albumen greatly diminished in quantity. Her appetite remained good throughout her illness, and she was kept on a liberal diet. The bag of ice was applied several times a day, which always gave great relief. In the progress of her illness, she suffered several severe attacks of coryza and bronchitis, in which her eyes became suffused and eyelids swollen. She was in the height of one of the attacks, when I was first called to her house, March 26th. Although the more threatening symptoms were kept in abeyance during the remainder of her illness, her eye sight became more and more impaired, until her confinement, and objects became more and more indistinct and confused. As she described it, it seemed to her that a drop curtain was constantly being let down from above, hiding from view all objects before her.

She was subject to illusions and perverted sensations. She fancied she saw objects moving about the room and heard strange noises. Her pulse varied from 110 to 125; at no time was it below 100. She was taken in labor April 20th, about noon. It commenced suddenly with a severe pain in the hypogastrium, attended with tenesmus and a constant desire to stool. The waters broke early, and the face of the child advanced into the hollow of the sacrum, and there became arrested. Her strength became exhausted, and the pains inefficient. Her pulse ran up to 140 and over. With the assistance of Dr. Clark, who administered ether, I delivered her, with the forceps, of a living child, about 1 A.M., April 21st. The child was three or four weeks premature, feeble and emaciated. The mother lost but little blood. Twelve hours after confinement, I emptied the bladder with the catheter. The lochial discharge had become very offensive; there was no soreness of the abdomen; the patient was very weak; pulse 130; appetite not so good, which all through her illness so far was the saving clause. She had become very anemic, notwithstanding she had all along taken sufficient nourishment for a person in full health and vigor. Her complexion was pale, hands and fingers colorless. April 22d, relieved her bladder with a catheter; urine very dark and offensive; lochia profuse and extremely offensive; pulse 130. Directed on the day previous that her vagina should be washed out with a solution of bromo-chloralum and carbolic acid, and a free use made of the bromo-chloralum as a deodorizer about the bedding. Her mind cloudy and at times delirious; no apparent improvement in her vision. April 23d, had a severe rigor, followed by a slight fever. Had a slight attack of coryza and bronchitis; no tenderness of abdomen; able to void her urine; pulse the same, but appetite diminished, tongue coated and dry: mind still cloudy and wandering. Attributed the rigor to septic poison. Lochia still very offensive; no milk in the breast. The child quiet and sleeping most of the time; had no desire to nurse when applied to the breast. Prescribed sulph. quinine, five grs., to be taken three times a day until cinchonism is produced. April 25th: Her condition is somewhat improved; pulse 120; takes more nourishment; perspired freely in the night; mind more rational and consciousness returning; breasts begin to fill slightly, but the secretion of milk has not been sufficient for the wants of the child, and it has been fed partly with a spoôn up to the present time. Her improvement from this time has been very slow and gradual. During the next three weeks she had frequent sweats, usually coming on about 4 o'clock P.M. and in the night. One remarkable feature in the case: she at no time complained of headache during her illness. During delivery she suffered quite a severe rupture of the perineum, which was very slow to heal. No reparative action took place until the fourth week. She was not able to sit up until the fifth week. Her eyesight gradually improved; in two weeks she could count fingers held up before her, and define objects about the room; in four weeks she could read print in large type, but the improvement June 26th) is slow and gradual, and is influenced by the general condition. She can see better in the morning when fresh than she can in the evening when fatigued. She is now able to walk, but is soon fatigued, and complains of weakness of the lower extremities, from the knees down. Her urine after confinement gradually became clear and abundant. Albumen in it gradually lessened; now there is only a trace.

The child showed marked effect of the poison. During the first three days, it slept most of the time, showed no desire to nurse when applied to the breast. On the fourth day, it took hold with avidity; the mother having but little milk, it became necessary to feed it to satisfy its hunger. About the seventh day, my attention was called by the nurse to an eruption covering its scalp and on its neck, body, and arms. I thought it was the ordinary red-gum or strophulus, and would soon disappear. In two or three days, it became pustular on the head, and formed a crust nearly covering the scalp, resembling impetigo; on its body and arms it became dry and scaly, resembling lepra vulgaris. Its urine became scanty and stained its diaper a reddish color. Its passages from the bowels, of which it had two daily, became the color of Paris green. The child became wrinkled and withered, resembling a prematurely old person. Its appetite became ravenous. Save when it was crying for something to appease its hunger, it manifested no unusual fretfulness, and slept most of the time. The eruption partially disappeared at times, and returned in successive crops, the child becoming more withered and emaciated; at length I prescribed hydrargyrum c. creta, ⅓ of a gr., twice a day. There was soon a marked improvement in the condition of the child. The eruption soon disappeared and the skin became clean and healthy; no return of the eruption. Its urine became clear and abundant, its passages from the bowels natural in character. Its wrinkles were soon smoothed out, and it is now (June 26th) apparently a healthy vigorous child.

The important question arises: What is the relation of the puerperal state to albuminuria, and albuminuria to the varied phenomena which its presence indicates? The symptoms manifested in the non-puerperal state differ in many particulars from those in the puerperal state, which is undoubtedly owing to a strain put upon the organism by the evolution of the puerperal state, calling into action latent forces which nature has provided for a specific purpose. These forces depend upon and are exerted at the expense of the organism.

A perfectly well-constituted organism is able to bear the strain without material disturbance or impairment. *Hence, the causes of abnormal deviations must be sought for in some inherent weakness or idiosyncrasy, inherited or acquired.* It is well known that the evolution of the puerperal state often develops some natural weakness, which, up to that time, has remained latent. The nervous system shares more largely in the disturbance, manifested in the many forms of neurosis, such as melancholia, hysteria, puerperal mania, and neuralgia. It is evident, too, that the functions of many of the organs are interfered with through the nervous system. The functions of the stomach, lungs, heart, and liver are frequently disturbed, and it is evident, too, that the kidneys share in the disturbance, without suffering any permanent structural change. Commonly, albumen disappears from the urine soon after the puerperal state is past. The same may be said of the disturbed functions of all other organs, save where some latent disease has been developed and a temporary disturbance has brought on permanent structural changes. Pregnancy often develops or hastens consumption, hysteria, and insanity, but the disease was before latent in the lungs, or in the assimilative organs, or nervous centres. The strain put upon those organs by the evolution of the puerperal state has hastened the development of disease. *It is reasonable to suppose, then, that albuminuria is the result of one of the many forms of neuroses, growing out of the puerperal state*, disturbing the functions of the kidneys, analogous in manner to the disturbance of the functions of the stomach, manifested by morning sickness; of the heart, by its irregular action; of the nasal and air passages, by coryza and bronchitis.

The influence of albuminuria upon the puerperal state remains to be considered, and its consideration has an important bearing upon its treatment.

Aside from the usual forms of neurosis growing out of the puerperal state, we have a very dangerous factor to contend with—uremic poison. Its toxic influence is seen in swelling of the feet and puffiness of the face and eyelids, and in other usual symptoms of the poison, and sometimes effusion of serum in the pericardium, and in the connective tissue of the lungs. Superadded to the toxic effect of urea, there is a high tension of the nervous system, induced by the puerperal state, which, from slight exciting causes, is ready to break into tumultuous action.

Another effect of uremia is to impair assimilation and induce anemia, thereby diminishing the powers of resistance of the organism.

When albumen makes its appearance early in pregnancy, there are three important indications to be met: (1) to eliminate the poison as far as possible; (2) to support the patient; (3) to allay the nervous tension and guard against exciting causes. In the first, acetate or some of the other salts of potash with digitalis acts favorably upon the kidneys, and diminishes the quantity of albumen in the urine. Much of the poison can be eliminated by the action of saline cathartics upon the bowels. The second is best met by a liberal diet, tonics, and iron. To meet the third, absolute rest and quiet are necessary, with the use of opium and bromide of potassium, if an outbreak of convulsions or other paroxysms is threatened. When there is much cerebral disturbance, the application of ice to the back of the head and upper part of the spine answers an excellent purpose.

Convulsions are usually preceded by a rapid accumulation of uric poison in the blood and a scanty secretion of urine, and often the patient is attacked with only a slight premonition of coming disaster. In the treatment of these cases I have found that sulph. morphia injected hypodermically answers the best purpose. I never was able to get satisfactory results from bleeding or the use of chloroform. Two of the three following extreme cases of puerperal convulsions show the efficacy of morphia in arresting or mitigating the attacks.

Case IV.—April 23d, 1866, I was called to attend Mrs. H., a primipara, in the seventh month of pregnancy. Without premonition, she was suddenly attacked with convulsions, about 3 p.m., while attending to her household duties. Her husband, leaving her on the floor where she had fallen, hastened for the nearest physician. Not finding him in and failing to find others on the way, he at length came to me. I arrived about 4 p.m. I found the patient lying upon the floor insensible, her tongue badly bitten, there being no one with her to keep her teeth apart during the convulsions; her breathing stertorous; her face and eyelids much swollen, and her lower extremities edematous. Upon moving her to her bed, she had a frightful epileptiform convulsion, lasting several minutes. At that time I had had but little or no experience in treating the disease, and commenced treating the case *secundum artem*, according to the teaching of text-books and Professor Gilman. I bled her freely, placed a cathartic dose of calomel and soda on the back of her tongue, and administered chloroform. There were no signs of labor. The convulsions recurred every fifteen minutes, without abatement in severity. During the intervals she was in a profound coma; pupils were moderately dilated, and did not respond to the action of the light. I next injected half a grain of sulph. morphia hypodermically. The convulsions soon became less severe, and the intervals between longer. In two hours I injected another dose. She then sank into a quiet sleep, and had no more convulsions during several hours, unless disturbed. In the mean time I proceeded to induce labor by injecting the womb with warm water. Labor pains came on along in the night, and she was soon delivered. She had two convulsions after delivery, coming on as the influence of the morphia wore off. She did not return to consciousness until the third day after delivery. I was again called to her April 9th, 1867, near the middle of the ninth month of pregnancy. Her face and eyelids were puffy, and her feet and ankles swollen, but she complained of no bad symptoms. As a prophylactic, I bled her freely and prescribed a saline cathartic.

April 21st, she was delivered of a healthy child. During her confinement she showed no tendency to convulsions.

Case V.—Nov. 13th, 1877, I was called 5 a.m. to visit Mrs. W., a primipara, in the ninth month of pregnancy. She had apparently enjoyed her usual good health up to the day previous, her urine had become scanty and dark-colored. About 3 o'clock in the morning, she was taken with convulsions, which recurred at intervals from fifteen to twenty minutes. I found her insensible, her breathing stertorous and irregular, her face tumid and livid, pupils unequally dilated; her lower extremities edematous. Soon after my arrival, she had an epileptiform convulsion, lasting several minutes. In the convulsion her head and body were jerked to one side. No signs of labor. I injected half-grain sulph. morphia in the arm, and prescribed a cathartic dose of calomel and soda. She had another convulsion thirty minutes afterward, but it was less severe and protracted. The convulsions continued to recur about every thirty minutes, until I injected the second dose of morphia, when she became quiet, her breathing regular, and the pupils contracted, showing signs of narcotism. About 3 P.M. I was relieved of the management of the case by the family physician, who was absent when I was first called to it, but she had no more convulsions until about 12 o'clock in the night, when labor pains commenced. She was soon after delivered of a living child. She made a speedy recovery.

CASE VI.—I was called March 4th, 1878, about 1 A.M., to visit Mrs. L., in consultation with Dr. Dewitt. Mrs. L. was in the seventh month of her second pregnancy. She had apparently enjoyed her usual good health until two days previous, when she discovered that her urine had become scanty and dark colored, and she complained of some headache. In the night she was suddenly seized with an excruciating pain in the head. She soon after went into a convulsion. I found her comatose; respiration irregular or intermittent; pulse weak and small; pupils unequally dilated; the left arm extremely pronated; the fingers flexed and fixed in the palm of the hand by tonic rigidity of the flexor muscles of the fore arm. It was evident that a fatal lesion had taken place in the brain, either from apoplectic seizure or effusion of serum. A quarter of a grain of morphia was injected in the arm, and an attempt made to induce labor. She sank gradually, and died about six o'clock in the morning. In this case, the puffiness of face and eyelids and swelling of the feet were slightly noticeable. There was a rapid accumulation of urea in the blood, suddenly overwhelming the nervous centres by its toxic influence.

These cases are instructive in showing the tendency to the rapid culmination of toxic influence without attracting the attention or exciting the fears of the patient. Neither of them had been conscious of ill-health, and had not consulted a physician previous to the seizure. It is probable that a timely interference would have averted the catastrophe.

CLINICAL CASES.

NEW YORK WOMAN'S HOSPITAL.

A CASE OF LACERATION OF THE CERVIX UTERI AND PERINEUM, WITH RESULTING CYSTOCELE, RECTOCELE, AND COMPLETE PROCIDENTIA UTERI.

SERVICE OF DR. THOMAS ADDIS EMMET.

BY
E. C. DUDLEY, M.D.,
Chicago.
Late House Surgeon.

(With nine woodcuts.)

THIS typical case illustrates the natural results of laceration of the cervix uteri and perineum, and in its history their surgical treatment will be considered.

Mrs. R., the mother of six children, upon admission in Nov., 1877, suffered from the combined effects of these two accidents, *i. e.*, subinvolution of the uterus, vagina, and perineum, complete procidentia of the uterus, very marked cystocele and rectocele, eversion and erosion of the cervix, and cystic degeneration of the everted cervical membrane.

Among the prominent symptoms were menstrual irregularities, great difficulty in standing and walking, sterility, and nervous asthenia.

The treatment consisted *first*, in repairing the lacerated cervix uteri; *second*, in an operation on the anterior vaginal wall for temporary support to the uterus, and for the cure of the cystocele; *third*, in an operation for the cure of the rectocele and restoration of the perineal body. To these three operations the names Trachelorrhaphy,[1] Elytrorrhaphy, and Perineorrhaphy have been applied. They will be described in the order mentioned.

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[1] A word first used by the writer in the N. Y. Med. Journal for Jan., 1878.

I. TRACHELORRHAPHY.[1]

The preparatory treatment consisted in the daily application of the hot-water vaginal douche, in opening with a Buttles' lance, two or three times a week, the cysts of the cervical membrane which were present in large numbers, and in frequent application of a pledget of cotton saturated with tannin and glycerin. Eight weeks of such treatment resulted in the emptying of all the cysts, in the healing of the erosion, and in a reduction of at least twenty per cent, both in the depth of the uterine canal, and in the diameter of the cervix, which at time of admission were respectively five and one-half and two and one-half inches. This preparatory treatment is of prime importance, because experience has shown that, unless such treatment be practised, the operator may not only fail to secure union, but the operation, even though in itself successful, will very generally be followed by little or no relief from subinvolution, congestion, and their attendant symptoms. The cure therefore should be made as nearly complete as possible before operation, then the operation will serve the double purpose of making the cure both complete and permanent.

Operation.—The patient having been placed in the lateral position, and the uterus exposed by a Sims' speculum, Dr. Emmet performed his operation for closure of the cervix. With the curved scissors and tenaculum, the surfaces on the right of the line C D and on the left of the line A B, fig. 1, were denuded. Much care was taken thoroughly to remove a wedge-shaped mass of cicatricial tissue which had formed in the angle of laceration from nature's attempt to repair the cervix, and from the application of caustics in previous treatment. This tissue, it not removed, not uncommonly interferes with union by preventing easy approximation of the flaps, and by causing the suture to cut; if, however, union should take place over such tissue, it might act as a foreign body and establish a focus of irritation capable of producing direct or reflex neuralgia; such at least has been the observation of Dr. Emmet.

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[1] The part of this paper relating to Trachelorrhaphy, including the cuts, is substantially an abstract of a report by the writer, which appeared in the N. Y. Med. Jour. for January, 1878.

The surface between the lines A B and C D was left undenuded, for the membrane of the lower part of the cervical canal to be restored. Silver sutures were then introduced, as shown in figure 2, which represents the position of the sutures on one side before twisting. Fig. 1 shows the same sutures before twisting, as viewed through the speculum. An equal number were passed on the opposite side in exactly the same manner.

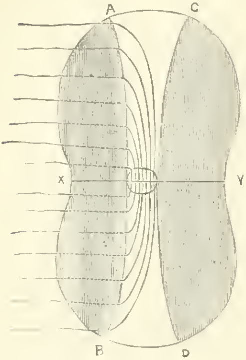

FIG. 1.—The upper half represents the anterior lip of the lacerated cervix. The lower half the posterior lip; the circle in the line X Y represents a section of the canal at angle of laceration. The line X Y is at the angle of laceration. The sutures are indicated as passed on one side only.

The sutures were then tightened and twisted, so that the surface A X Y C fig. 1, was brought in contact with the surface X B D Y in such a manner that point A coincided with point B, and point C with point D, and the lines A C and B D were made to bound the external os uteri. Fig. 3 shows the operation complete, with the everted tissue rolled back inside of the uterus whence it came; in this figure the dotted

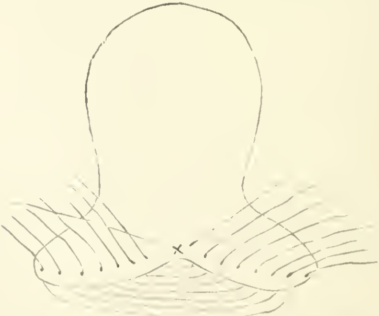

FIG. 2.—Lateral view. Sutures on one side not twisted.

lines indicate the position of the lacerated and the everted lips before closure. The measurement from the angle of laceration, point x, fig. 2, to the fundus was four inches, and from point x to the margin of the lip one inch; it would therefore appear reasonable to assume that the uterine canal, when fully restored, would measure five inches; such, however, was not the case. The uterine canal, after restoration of its cervical portion, measured from the external os to the fundus only three and three-quarter inches. This decrease is due, in part at least, to the rolling in of everted tissue, to loss of blood and tissue in denuding, to rupture of cysts occasionally found in the cervical membrane, to contraction of muscular fibre due to the stimulus of the operation, and to the relief from congestion which would naturally follow the restoration of the everted tissue to its normal position inside of the uterus. A continuation of the hot-water vaginal douche was the only after-treatment employed. The sutures were removed on the eighth day; union was perfect. In another week the patient was able to walk about the ward. The uterus now measured only three inches in depth, and had so diminished in size and weight that, although still prolapsed and retroverted, its natural supports sufficed to keep it from complete procidentia.

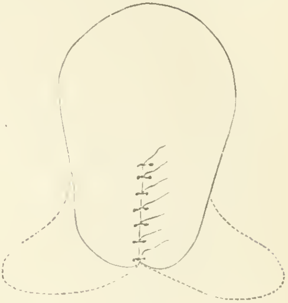

Fig. 3.—Lateral view. Sutures twisted. Operation complete.

II. ELYTRORRHAPHY.

The anterior vaginal wall, deprived of perineal support, had fallen below its normal position, dragging the uterus after it, and presented at the vulva in the form of a cystocele. Emmet's modification of Sims' operation on the anterior wall was accordingly done for the purpose of disposing of the cystocele, and of giving the uterus temporary support in its normal position until the perineal body should be restored.

Operation.—With the patient in the lateral position, the uterus was replaced and held in position by means of a sponge probang, with which an assistant pressed the posterior vaginal cul-de-sac upwards and backwards towards the hollow of the sacrum, and thereby the cervix was drawn upwards and backwards in the same direction, so that between the cervix and hollow of the sacrum there was no longer sufficient space to admit the fundus, even if it had been disposed to fall backwards; while the space in the anterior half of the pelvis had been so increased by the increased distance of the cervix from the symphysis pubis, and by its decreased distance from the hollow of the sacrum, that the uterus, finding the direction of least resistance to be forward to its normal axis or to slight anteversion, naturally took one of those positions and held it. With the uterus thus kept in position by the probang, the operator with two uterine tenacula found in the loose vaginal tissue two points, at A and B, one on each side of the cervix, which could be brought together in front of the cervix at C; then with the scissors a surface about two lines in diameter was denuded at each of the points A and B, and another surface about twice as large at the point C. A silver suture was then passed, as shown in fig. 4, and twisted; fig. 5 shows the suture twisted so as to secure the surfaces A and B in contact with the surface C. The cervix was thus swung upwards and backwards in a sort of pocket, which served to hold it in place independently of the probang, which was now removed.

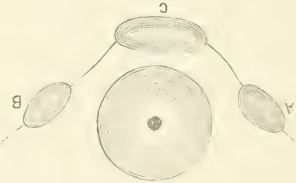

FIG. 4.[1]

By this suture, which acted as a running string in a bag, two longitudinal folds were formed on the anterior wall of the vagina, and served as guides for denuding and turning in the remaining redundant tissue. Fig. 5 shows the lines of denudation, which were directed along the crests of these folds, E F and E G, with the sutures in place before twisting.

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[1] By error of the engraver, the letters in figures 4, 5, and 6 were cut upside down.—ED.

Fig. 6 shows the same sutures tightened and twisted.

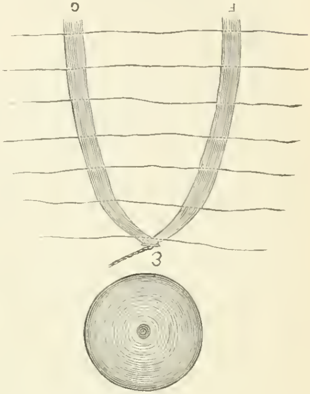

Fig. 5.

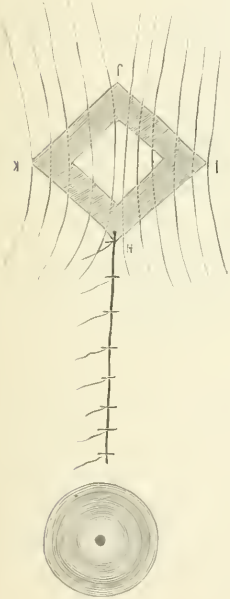

Fig. 6.

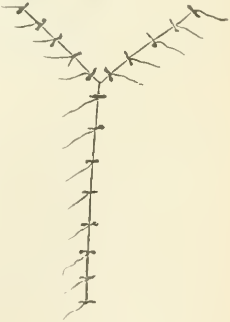

Fig. 7.

The redundant tissue of the upper part of the anterior wall had now been turned in and disposed of; the remaining superfluous tissue which presented at the vulva and formed most of the cystocele was treated by denuding a strip of membrane of quadrilateral form, H I J K, fig. 6, of which the point J was located about three-quarters of an inch above the meatus urinarius; the sutures were so introduced that, when tightened and twisted, the denuded surface, I J K, was in contact with I H K, and the points H and J coincided with each other.

Fig. 7 shows the lines of union and the twisted sutures all in place. The after-treatment was as in previous operation.

On the eighth day the sutures were removed. Union in the upper part of the vagina was good, and the uterus was held in perfect position, but in the diverging lines below there was no union. Failure in this part of the operation is a common result of the first attempt, because there are three diverging lines of union, all cicatrizing and contracting at the same time during the process of healing, so that the continued approximation of the denuded surfaces cannot easily be maintained. The operation in this part was repeated after a few days, with a perfect result.

There was now a firm rod of cicatricial tissue extending between the pubes and cervix uteri, and under this a double fold of the vaginal wall, which had been turned in, both crowding the cervix away from the pubes towards the hollow of the sacrum, and thus throwing the fundus forward into its natural position, and holding it there. The position, therefore, was such as would exist immediately after the loss of the perineal body, before the anterior wall of the vagina, in consequence of being deprived of support, had fallen below its level, and dragged the uterus with it. Unfortunately it is not an uncommon practice to abandon the patient at the end of the operation for cystocele, in the hope that the uterus and the anterior vaginal wall will maintain their normal relations without perineal support. Such a course is always followed by disappointment, and the cystocele and procidentia completely reappear within a few months. Elytrorrhaphy never permanently cures cystocele or prolapsus, but is simply one of the steps in their treatment. It therefore remained to restore the perineal body, and thereby give natural support to the vaginal walls.

III. PERINEORRHAPHY.

Dr. E. C. Dudley performed Emmet's modification of Sims' operation, which consists in a union of tissue from three sources: from the lips of the lacerated perineum on either side, and from the redundant tissue of the posterior wall of the vagina, to which the name rectocele has been given. Instead, therefore, of removing the rectocele by cutting an elliptical piece from the posterior vaginal wall, and uniting the edges of the wound with sutures, it was used as material in the formation of a new perineum.

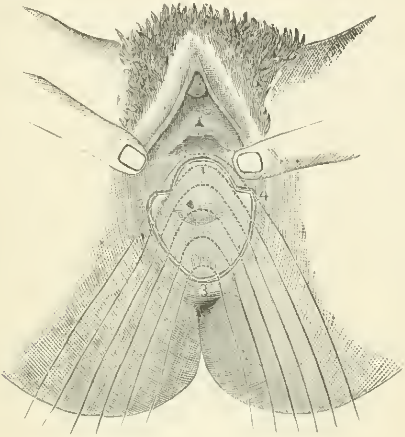

Fig. 8.

Operation.—A little below the level of the meatus urinarius, at the junction of the mucous membrane and skin, the points 2 and 4, fig. 8, one on each labium majus, were selected and brought together with a tenaculum, for the posterior commissure to be restored; then holding these tenacula in the position described, a third tenaculum was hooked into the crest of the rectocele at point 1, fig. 8, and this point was brought in contact with the commissure, so that the three points 1, 2, and 4 coincided with each other, and formed one and the same point; then the redundant tissue of the posterior vaginal wall was found to have taken its place between the lips of the lacerated perineum, where it could be denuded and used as material for the reconstruction of the perineal body, and it was also found that the original curve and condition of the posterior vaginal wall had been restored. It will soon become perfectly clear that the entire object of the operation was to render this condition permanent, and thereby to form a solid triangular perineal body. At each of the points 1, 2, 3, and 4 a small piece of membrane was removed, and these four denuded spots were made the guides for the remaining denudation. In the same manner as in the two previous operations,

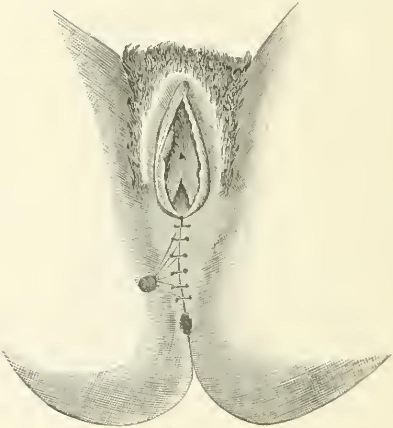

FIG. 9.

the membrane bounded by the broken line 1, 2, 3, 4, was denuded, the lower part being that of the lacerated labia, and the upper being the lower portion of the rectocele, which was to be included in the new perineal body; this denudation of the rectocele extended backwards about one inch from points 2 and 4, fig. 8, towards the cul-de-sac of Douglas, and was much facilitated by pushing forward the recto-vaginal septum, with the finger in the rectum.

The sutures were now passed, the lower one first, the index finger of the left hand being in the rectum as a guide to the needle, and to avoid the danger of perforating the recto-vaginal septum. Observe that the upper suture enters the left labium at point 4, emerges at its inner margin, again enters the undenuded membrane at the crest of the rectocele just above the line of denudation at the right of point 1, emerges at a corresponding point on the left, again enters the right labium, and is finally brought out at point 2. It is clear that such a suture, when tightened, will draw the crest of the rectocele down to the posterior commissure, so as to make the points 1, 2, and 4 coincide with each other at the anterior angle of the new perineal body, and will thus act as a material aid to the sutures immediately below.

It will also, by drawing undenuded membrane over the entire vaginal portion of the wound, protect it from any vaginal discharges which might otherwise come in contact with it and endanger union. The other sutures, from the points of entrance to the points of exit, were all entirely buried under the denuded surface. The sutures were now tightened and twisted, and their extremities collected in a bundle, and included in a short piece of small rubber tubing, which was made fast by winding wire tightly about it. (Fig. 9.)

After-treatment as in two previous operations: sutures all removed on eighth day; union perfect by first intention.

These operations were performed at intervals of about a month. The patient is now perfectly well. Physical examination shows the uterus in position, and already reduced nearly to its normal size.

"BALLOONING" THE PROLAPSED UMBILICAL CORD.

BY
F. A. ASHFORD, M.D.,
Washington, D. C.

IN October last I was called to attend a lady in labor with her third child, and upon making a digital examination, found a large loop of the funis in the vagina, which was pulsating vigorously during the intervals of pains, but very faintly, yet perceptibly while contraction of the uterus lasted.

The membranes had ruptured about twenty minutes prior to my arrival, and an unusually great quantity of liquor amnii had escaped (at least the nurse and patient so represented, and the extensive saturation of the pads and bed fully attested their statement.

The os was soft and dilatable, but quite thick, admitting easily one finger, and, with a little pressure, two fingers. The pains recurred every ten or fifteen minutes, but gradually became more frequent and severe. The head of the fetus presented in the first position (left anterior-vertex), the cord lying to the right side of the fetal head, towards the right acetabulum of the mother.

I tried in vain to retain the funis above the os uteri, both by the finger, the whalebone repositorium, and by Thomas' method. I then made a muslin bag (purse), and inclosing the prolapsed portion in it, introduced cord and bag together, but they as often escaped as soon as my fingers were withdrawn.

While engaged in these futile efforts, it occurred to me that, if the bag could be inflated after introduction into the uterus, it might be prevented from escaping, by its increased size keeping it above the presenting part.

Having with me a Gariel's air pessary, which is an india-rubber bladder, having a tube twelve to thirteen inches in length, and supplied with a stop-cock so as to retain injected air or water, I immediately determined to try the practical application of what seemed a feasible idea.

After some little difficulty, I succeeded in attaching the prolapsed fold of the cord to the air pessary, which after being oiled and rolled up, was pressed into the uterus above the head of the child. The pessary was then inflated with air, the stop-cock closed, and the whole remained above the zone of pressure of the head. When the head had entered the superior strait, the stop-cock was reversed and the air slowly escaped. Labor progressed naturally.

The result in this case was perfectly satisfactory. The great difficulty which I experienced was in attaching the cord to the pessary, and which at last was clumsily done by encircling the cord folded up with a broad piece of tape, and then tying this to the rubber tube close to the body of the pessary. Of course, this was liable to slip, because in attaching to the tube it could not be very tightly drawn, for fear of entirely closing its calibre, and it was still more important that the circulation in the cord should not be interrupted by the surrounding tape.

Some time after, I wrote to Tiemann & Co., of New York, to construct me an elastic bag, somewhat similar to the largest-sized Barnes' dilator, having an open pear-shaped sac attached to its side, with the neck so arranged that dilatation of the balloon (my friend, Prof. Busey, suggested the name "Ballooning the Cord"), would not constrict it sufficiently to compress the cord when it should be placed within this pear-shaped sac, but although I sent drawings and directions, I have not yet received an answer.

I am sure such an apparatus could be fashioned, which would accomplish the purpose in view. A large-sized Barnes' dilator would answer every purpose, by attaching the cord to the outer portion of the little sac, intended to assist in its introduction, either by means of a tape around the cord, or by first inclosing the cord in a muslin purse, and then fastening it to the little pouch on the side of the dilator.

I have never seen any mention of this principle as applied to retaining a reposed prolapsed funis, and the idea occurred under the pressure of great interest and anxiety; nor have I since had occasion to verify the seemingly good effect of this method in the case just narrated.

DORSAL DISPLACEMENT OF THE ARM OBSTRUCTING DELIVERY.

BY

MERIWETHER LEWIS, A.M., M.D.,
Lenoir, Tennessee.

ON the 13th of April, 1878, at 6 o'clock A.M., I was called to see Mrs. L. D. J., then in her second confinement.

Pressed for time and expecting similar calls elsewhere, I ruptured the membranes, employed orificial irritation (*Miller*), external pressure (*Playfair*), and had my forceps ready, so as to deliver promptly should the case prove at all tedious.

By the use of these legitimate means, an otherwise protracted labor was rendered comparatively short, so that at 9 A.M., six hours from the occurrence of the first pain, the head was safely delivered.

I had found it, on my arrival, presenting in the first position of the vertex (L. O. A.), and had carefully watched its flexion, descent, rotation, and extension. The usual pause in the labor now occurred, and I impatiently awaited the next pain.

In about a minute it came, but with it there was no rotation of the shoulders, and no accompanying restitution of the head. Another pain—another, and another—and still no change, the shoulders remaining locked, as it were, beneath the pubic arch.

Suspecting some unusual complication, I pushed up the shoulders, and by a deep introduction of the finger, discovered the left forearm lying at right angles across the back of the neck and closely jammed between it and the pubic bones.

As delivery was utterly impossible with the arm in that position, the indication to bring it down was imperative. It was resolutely attempted; the elbow was pushed upward and backward, and, with much difficulty, the hand swept over the side of the face. Placing my index fingers in the axillæ, rotation and delivery were easily accomplished.

The placenta was promptly extracted by the method of Credé. The arm had sustained no injury, and both mother and child did well.

CORRESPONDENCE.

THE VALUE OF ELECTROLYSIS IN THE TREATMENT OF OVARIAN TUMORS.

BY
R. ULTZMANN, M.D.,
Vienna.

VIENNA, July 10th, 1878.

DR. PAUL F. MUNDE.

DEAR DOCTOR:—While thanking you cordially for the transmission of your paper on "The Value of Electrolysis in the Treatment of Ovarian Tumors," reprinted from Volume II. of the Transactions of the American Gynecological Society, and likewise for the praise which you kindly bestow therein on my modest labors in that branch, I still cannot refrain from making a few remarks on the subject.

Very naturally, you collated the several final results of the published cases, and drew therefrom your conclusions. You found that a considerable percentage of cases were radically cured by electrolysis—and this conclusion is in reality an erroneous one.

In saying this, I do not wish to imply that the respective authors intended to publish untruths. I do not for a moment suppose this; but the authors published their final results much too soon; they did not wait one-half to one year to see what then became of the presumably cured cases, and there lies the error of your statistical compilation.

In class A of your paper, only two cases should be accepted, which are known to have remained cured for two years after the electrolytic treatment. I will give you an instance of error:

A certain Mrs. Enyedi, from Transsylvania, the wife of an engineer, was for a long time under the treatment of Dr. Ehrenstein, in Dresden, by whom she was discharged cured. This lady, by request of Dr. Ehrenstein, at once published in several of the daily papers a note of thanks for her complete cure, and, after all, she was not radically cured; for scarcely three months later, the cyst began to refill, and the beneficial result proved to be merely temporary. This case is considered by Ehrenstein as cured, but it is anything but cured. The same may be said of the cases of Dr. Fieber in Vienna. I do not know of one case even which was radically cured by him, although he has published several cures.

Thus, for instance, the case published by him and quoted in your paper on page 32 as Case XIII. is positively not yet cured at the present writing. It is the case of a young lady who was first treated by Dr. Ehrenstein and discharged as cured. As she was not cured, however, she again put herself under electrolytic treatment by Dr. Fieber. The cyst again disappeared, and the patient was again discharged as cured by Fieber, and the case published as a cure in the *Allg. Med. Zeitung*, and still the case was not cured. Three months later, I was called to see this patient, and found the cyst again partly refilled; I again performed electrolysis, and the cyst diminished; but the patient is still not cured to-day, although she was treated by electrolysis by Ehrenstein, Fieber, and myself for nearly one whole year. She is still under my care, and I have already been obliged to tap her seven times. This case is identical with the one published by me and quoted in your paper on page 59 as Case III. This illustration may suffice to show you how the majority of cases were cured by electrolysis.

If Dr. Semeleder wished to be sincere, and were to inquire in due time after the condition of the patients published by him as cured, he would soon discover that but little is left of the cures he so confidently announced.

The whole method is sufficiently clear to me to convince me that it possesses no further therapeutic value. Here in Vienna nothing more is heard of electrolysis. Neither Benedikt nor Fieber have done anything with it for the past two years—a sufficient proof that both have changed their minds about the method. We have ovarian tumors enough in Vienna. Billroth has already performed far more than one hundred ovariotomies, so also, in smaller numbers, other operators; but since my publication on the subject, no ovarian tumor has been cured, in Vienna, by electrolysis.

I therefore find myself compelled, my dear doctor, to dissent somewhat from your final conclusions, and to adhere to the decision published by me in my original article.[1]

If you think this letter of sufficient importance, I have no objection to your publishing it. With kind regards,

Yours truly,

Dr. R. Ultzmann.

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[1] Wiener Med. Presse, 42-46, 1876.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, December 18th, 1877.
The President, DR. SKENE, *in the Chair.*

DR. M. A. PALLEN read a paper on

ARTIFICIAL VESICO-VAGINAL FISTULA.[1]

DR. T. G. THOMAS reported a case of

COMPLETE INVERSION OF THE NON-PREGNANT UTERUS AND VAGINA.

About a month ago, he was called to New Jersey to see a patient who was said to be suffering from a fibrous tumor. The patient was a farmer's wife, living about eleven miles from the station, in a district of country not very thickly settled. He found her excessively pale from anemia; about fifty-two years of age; had never ceased menstruating, and about thirteen years ago had had her last child, having born six or eight children. As she approached her menopause, she noticed that, instead of decreasing, the menstrual fluid was very much increased in quantity. This went on in that way until about three years before Dr. Thomas saw her. She had not only menorrhagia, but very violent metrorrhagia—at times so severe that she feared for her life. After this, she took a variety of drugs for the loss of blood, but persisted in refusing to have an examination made.

At length, a tumor made its appearance outside of the body. The tumor became excessively sensitive, so that she could not bear anything to touch it.

When the patient was placed on the table, Dr. Thomas was puzzled. He thought she had no vagina at all. When the finger was introduced, it would not proceed more than an inch upwards into the vaginal canal. There was no opening at the upper portion. The whole mass bled freely; but on examination it was found that the os uteri was inverted, so that gradually the small tumor, which is seen to the left of the diagram, had gradually drawn the non-pregnant uterus downward, until it had resulted in this condition of things. It should be remembered that thirteen years had passed since pregnancy, and this condition had existed three or four years. There was found complete inversion, not only of the uterus, but of the vagina.

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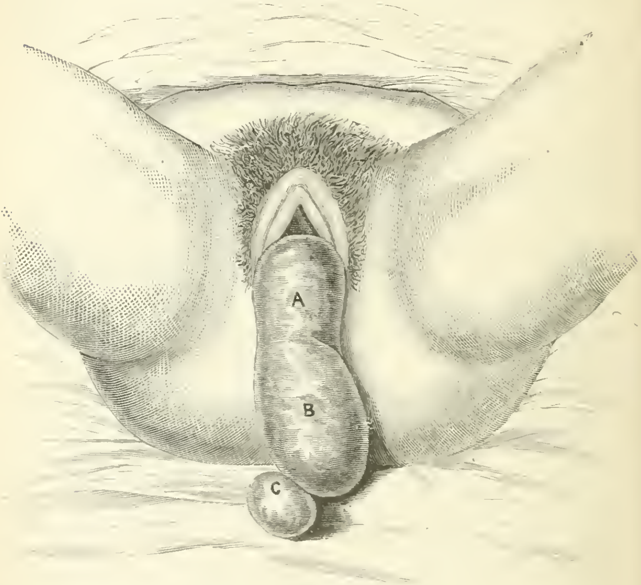
[1] See ORIGINAL COMMUNICATIONS, April number.

The woman was so exhausted that he removed the tumor with his serrated scoop, the instrument he generally uses. There was great hemorrhage, which he checked and replaced the uterus. He also made some little attempt to reinvert the uterus; but the woman was so weak that he thought it best and wise to desist; so he applied a tampon and left her. He has not seen her since; but has heard from the physician in attendance that she rapidly recovered; and when means were proposed for replacing the uterus by means of elastic pressure, she objected on the ground that she was so well that she did not want anything done. The woman has passed the menopause, and hemorrhage has entirely ceased; and as she now keeps the uterus inside the vagina without any effort at all, she is perfectly comfortable. Owing to this fact, she resisted any operation; but he pro-



A, Vagina. B, Uterus. C, Fibroid.[1]

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[1] An almost identical diagram (with the difference that the fibroid is represented on the *left* of the fundus) is found in McClintock's Clin. Memoirs on Dis. of Women, Dublin, 1863, p. 97.—Ed.

posed in a little while to make elastic pressure by means of the air or water bag. This is one of those cases of inversion of a non-pregnant uterus sometimes met with.

It is very much like one cited in McKenzie's work. In that work, there is a diagram so much like this, that, if he did not know to the contrary, he would think this was a copy. The tumor existed on one side and dragged the uterus down in that way. It is singular that the non-pregnant action is subject to this condition, and it is also singular that a non-pregnant uterus can reinvert itself. He saw Dr. Sayre present. Perhaps he could remember a case which occurred in his service in Bellevue Hospital some years ago. Some one had inserted a metallic ball in the vagina for the purpose of sustaining the uterus, and gradually this ball had been completely swallowed by the uterus. The diagnosis was difficult in this case. When the probe was introduced, the metallic ball was struck, and a clicking sound could be heard. The ball was successfully extracted, and the patient recovered.

In reply to a question, Dr. Thomas said the tumor in the case reported was a hard round fibrous tumor, about the size and shape of a medium-sized turnip. There was no pedicle whatever. The largest circumference of the tumor was only about one-half an inch less than the attachment of of the tumor. It was very firmly and largely attached.

Dr. E. Noeggerath reported a case illustrating

THE EFFECTS OF ELASTIC PRESSURE ON AN INVERTED UTERUS,

which occurred in his service at the Mount Sinai Hospital.

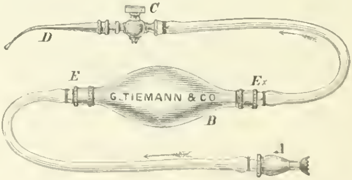
The patient had complete inversion of the uterus of eighteen months' standing. He tried several methods to replace the uterus without succeeding, apparently on account of the fact that the tissues of the uterus were so brittle that he could not exert the proper force. After the tissues had recovered from the effects of these efforts, he placed in the vagina one of Dr. Barnes' bags, covering it well with carbolic soap, in order to prevent bad effects—intending to leave it as long a time as possible. The bag was distended to the extent of not causing suffering to the patient, and it was allowed to remain there day and night. On the second day the pulse and temperature had already risen, and the bag was withdrawn, and a large amount of fetid pus, probably two ounces, was found to have accumulated. In order to counteract the effect of such a continued pressure, the bag was taken out once every day, injections made into the vagina, and replaced. It was left there during the night. The pressure was gradually increased, but all the advantage that was obtained by this operation was no more than that gained by the previous manipulations. The treatment was persevered in thoroughly for two weeks without success. Then the patient was allowed to rest, and the treatment begun again. She shortly after left the hospital. He intended, if opportunity offered, to try the elastic pressure again, although it had a thorough trial with no good effect.

Dr. H. J. Garrigues presented an

APPARATUS FOR TRANSFUSION,

with the following account of the method of using it:

"In presenting a transfusion apparatus to the society, I do not lay claim to any originality. The chief characters of the instrument I am going to show you are found in that submitted as early as 1853 to the French Academy of Sciences by *Mathieu*, that of *Roussel*, of Geneva (Switzerland), which took a prize at the International Exhibition of Vienna, and *Playfair's* improvement on *Aveling's* apparatus. My only merit, if merit there be, consists in calling Tiemann & Co.'s attention to the subject, and in helping them in certain details of the construction.



Construction.—The instrument is essentially a diminutive Davidson's syringe. It consists of two rubber tubes united by a rubber bulb with two metal cup valves opening the same way. At one end of the instrument is a tin plunger, at the other a nickel-plated stop-cock and canula. The canula is of small calibre, tapering, probe-pointed, and flexible.

Operation.—A healthy individual, preferably a strong man, is bled, if possible in an adjoining room, and about eight or ten ounces drawn into a perfectly clean vessel. Whilst the blood is collecting, it is stirred or whipped continually with a silver fork or a wooden stick, by which process the fibrin is made to coagulate separately on the implement used for whipping the blood. This separation takes about five minutes. Next the whipped blood is strained once or twice through a perfectly clean piece of old linen, into a vessel standing in another vessel with lukewarm water (at about 105°). If there be no warm water at hand, it may be dispensed with, for the blood may lose 30° before any untoward symptom due to its loss of temperature appears. If possible, the syringe should be warmed, and then filled by compressing the bulb until the blood flows through the canula, when the stop-cock is turned.

The next stage is to open a vein on the patient, most conveniently one at the elbow bend (never on the neck, in order to avoid the danger of air being absorbed.) If none be visible, they can be made so by compression above. The skin that covers the vein is lifted up in a fold, and an incision made perpendicularly to the vein. In order not to lose the vein, if by chance the canula should slip out, it is advisable to pass a probe or a double thread under it. The best way of opening it is to lift its anterior wall with a pair of fine forceps or a hook, and make a nick in it with a pair of fine scissors. Thus a minute flap is formed, under which the point of the canula is easily introduced. If these instruments are not at hand, the vein may simply be slit open with a lancet, care being taken not to perforate the posterior wall. Before introducing the canula, the operator convinces himself, by pressing slightly on the bulb, that all air has been chased from the syringe.

The most important of all is to *inject slowly*, in order to avoid dilating the right side of the heart, and stopping the free flow from other veins, and in order to give the blood time to be purified in the lungs. The bulb ought to be compressed so slowly that the fluid scarcely forms a stream, but comes almost in drops. Thirty seconds are not too much, and three seconds are the shortest time for each compression. The bulb contains about three drachms, but by moderate pressure about two drachms only are expelled from it, and consequently, by counting how often it is emptied, we may calculate how much blood has been injected. The quantity to be used must depend on the supply at hand, on the amount of blood lost, and on the time elapsed since the loss, for the quantity lost is in a very short time replaced by lymph and water, and overfilling the vessels is dangerous. In most cases four to six ounces will do, but eleven have been injected with success. If a resistance be felt in working the bulb, the operator must first ascertain that it does not come from compression of the vein. If this is not the case, the resistance is probably due to overfilling of the right side of the heart. Therefore he must interrupt the operation or end it altogether, according to circumstances. The same rule applies when dyspnea or other unpleasant symptoms appear.

After the operation the wound is dressed as after phlebotomy.

As often as the instrument is used, it must be completely separated, in order to clean it. Even the fittings must be taken off by undoing the wires. Else a little blood will be left between the interior part of the fittings and the wall of the bulb, where it will dry and corrupt. Neglecting this precaution has caused acute septicemia and death.

It will be seen that the operation here described is the *indirect transfusion of defibrinated human blood.*

The *indirect transfusion* presents great advantages over the direct. The blood-donor need not see the patient, nay, not even come into the sick-room, where sometimes he faints, so that no blood can be obtained from him. No canula is introduced into his veins, which exposes him much less to dangerous consequences.

The use of *defibrinated blood* presents also great advantages over the use of the entire blood. The danger of injecting coagula which may put an end to the patient's life is avoided, and the operator can work at his ease. By being whipped, the blood is delivered from carbonic acid and saturated with oxygen. Numerous experiments have proved that defibrinated blood is quite as efficacious in every respect as the entire blood.

According to the repeated investigations of Panum, Ponfick, and Landois (1875), it does not seem justifiable to inject blood from animals into the vessels of man.

It will be known to the society that Dr. T. Gaillard Thomas and others have successfully injected milk into the veins of patients (see the *American Journal of the Medical Sciences*, January, 1876). The instrument may, of course, be used for this substance as well as for defibrinated blood.

Bulb apparatus, in general, are preferable to syringes with a piston, because this rarely fits when the syringe is not constantly used. All instruments of glass and hard rubber are also apt to break.

A special advantage in the method proposed is that the whole apparatus is filled with blood before it is introduced. Thus the trouble of chasing the air from the canula after introduction is avoided. The instrument is so small and light that it easily can find room in the obstetric bag, and, accordingly, *always be at hand.* It is easily managed even without skilled assistance, and is not likely to get out of order. Finally, it is so cheap that every practitioner can afford to buy it, and as transfusion may enable him to save life when all other means fail, some instrument for its performance ought to form a part of the obstetric apparatus."

Dr. Noeggerath remarked that he had listened to the explanation of the doctor with pleasure, and thought it a very useful instrument in many respects. It is not only simple but cheap; and if he had any objection to offer, it would not be directed against this particular instrument, but against instruments for transfusion in general. The operation of transfusion has not been done as often as it might have been, because of apparatus necessary to perform it, and because physicians generally have no instrument especially adapted to the operation.

Now every physician present probably had an instrument which did all that any other claimed to do. Therefore it was his impression that instruments like that of Garrigues were unnecessary.

He referred to Dieulafoy's aspirator, which does all that instruments of this kind claim to do. He thought it important for the great body of physicians to know that there is no necessity for inventing instruments especially adapted to this operation. He had performed the operation for transfusion five or six times, and used no other instrument than Dieulafoy's aspirator. He claimed for this instrument one great advantage, namely, that it excluded the air. There is no doubt that in the use of the ordinary instruments air is injected, yet it has been demonstrated physiologically and experimentally that air injected into a vein located far from the heart does no harm. If air is injected into the arm, a large amount may be injected without injury. Therefore this much-dreaded accident of injecting air into the system, during the course of an operation for transfusion, is of no account whatever, unless it is injected in large quantities, or unless it is injected in large veins near the heart.

He had another objection to the method in which the operation is generally performed, and that is the custom of opening a vein. In the operations performed by him, he never opened a vein by scissors, but introduced the small needle of Dieulafoy directly.

In that case there was hardly any danger. In a patient suffering from leucocythemia, he used a nozzle no larger than the needle of an ordinary subcutaneous syringe; still the blood from this opening was so difficult to control that it continued to soak the bandages two or three days. Quite a number of cases have been reported, in which the cut in the vein has become inflamed. Therefore, it is important that the vein be not opened by a knife before introducing the needle, but that the blood from the donor should be introduced by as small an opening as possible, so as to avoid a lesion of the vessel. He suggested that the canula of this instrument be made so that it may be introduced directly.

Dr. Garrigues agreed with Dr. Noeggerath in his remarks in reference to Dieulafoy's instrument; but that instrument occupies much more room than the one exhibited. It is not likely to be at hand when wanted. That is an important fact, for in constructing these instruments, not only the convenience of city, but country physicians must be taken into account. He thought that one great reason why transfusion had not been more generally practised is, that instruments are too expensive and not easily manipulated.

Regarding the needle, he did not think the little incision made in the vein preparatory to the introduction of the nozzle of much account, since the incision in the skin is the same. Unless care is taken, besides, the needle will be apt to perforate the posterior wall of the vein, so that the blood is not injected into the vein, but in the surrounding connective tissue. Aveling's aparatus has a canula pointed like a trocar; that is not the case with this instrument—it is probe-pointed, and thus the possibility of perforating the posterior wall of the vein is prevented.

He thought Dr. Noeggerath correct in stating that experiments have been made with injections of air into the veins of animals. It has been done both in this country and in Europe. Dr. Thomas G. Morton, of Philadelphia, has injected four drachms of air in a dog, and a day or two after he was in perfect health. But even if air does not kill, it is a danger, and it is an advantage in the instrument exhibited, that it does not admit a particle of it.

Stated Meeting, January 8, 1878.

The President, Dr. Skene, *in the chair.*

Dr. W. R. Gillette read the history of a

CASE OF SUPPURATION OF AN OVARIAN CYST WITH RUPTURE INTO THE INTESTINE.

L. W., æt. 36 years, U. S., married, housewife, admitted to St. Francis Hospital June 14th, 1877. Died July 31st. 1877.

Family history good. Has been married eighteen years, and had five children; four of whom are alive, the last being born eight years ago. She menstruated first when fourteen, and has always been regular, her last period being on the 16th of May. Early in January of this year, she slipped but did not fall. experiencing at the time a sensation as if something in her abdomen gave way. Previous to this she had noticed no enlargement of the abdomen, but after the accident she was conscious of a sore spot, a few inches above the left anterior superior spinous process; which increased in extent, and in two weeks she was subject to intermittent attacks of severe pain over the whole abdomen, which continued to increase in severity, with shorter intervals. These pains were aggravated by exertion, and not intensified by menstruation. In two months after the accident, the increase in the size of the abdomen and the general distress caused her to keep her bed, lying upon her back with the knees drawn up. During this time she had the symptoms of a severe hectic fever.

During the last four weeks, she has not had so much pain, but has suffered greatly from dyspnea, her bowels have been confined, and she has had no difficulty in micturition.

Physical examination revealed an abdominal tumor of considerable size, which was dull upon percussion, and filled with a fluid so thick apparently as to render fluctuation somewhat indistinct. Fluctuation was not perceptible in Douglas' cul-de-sac. The *uterus* was somewhat lower than usual, but upon the passage of the probe its cavity was found to be of normal length.

A hypodermic needle was inserted into the cyst, and a syringeful of the fluid withdrawn. It proved to be of a thick creamy consistence, of a dirty gray color, and contained so much albumen that the addition of nitric acid rendered it solid.

Upon submitting the fluid to the microscope, leucocytes in great profusion were found, together with larger cells crowded with granules and oil vesicles, some of the cells being multinucleated. Squamous epithelium and crystals of cholesterin were also present.

Her *general condition* was very much depreciated. She was extremely emaciated and pallid, and her countenance wore a very anxious expression and was of a very dusky hue. Her breathing was short and labored.

Temp. 103½°. *Pulse*, 123, wiry and irregular. She perspired freely upon the slightest exertion, and during sleep, but had no well-defined chilliness. The tongue was thickly coated, but moist.

Appetite entirely wanting, taking only a little fluid food.

Bowels constipated, requiring the constant use of purgatives.

Urine of normal quantity, *spec. grav.* 1024, *reaction* acid, no albumen present.

She was ordered 10 grs. of quinine twice a day with 10 gtt. of tinct. ferri. chlor. every three hours. Also 10 gtt. of Magendie's solution were given night and morning, as she suffered considerable pain, and milk punch and beef-tea ad lib., with 4 grs. of carbolic acid, three times a day.

On the 16*th*, the 2d day after admission, it was decided to aspirate, and accordingly three quarts of the thick fluid were withdrawn. That portion of the fluid drawn from the upper part of the cyst was thinner and less purulent than that drawn from the inferior portion which, when set aside, proved to be fully one-half sediment.

A poultice containing ℥ ij. of tinct. opii was then applied to the abdomen and changed twice a day. She was kept quietly in bed and not allowed to rise under any circumstances.

It was decided that she should be operated upon on the following Thursday, June 21st, for the removal of the tumor which was believed to be a suppurating ovarian cyst, but on Monday morning (the 4th day after admission), at 5 o'clock, she was taken with a profuse diarrhea. The stools examined contained very little fecal matter, but were creamy and greenish-gray, resembling closely in appearance the fluid that had been withdrawn by the aspirator from the cyst. The *temperature*, which previously had not been below 102°, fell to 101°, but in the afternoon again rose to 102½.

The next day, Tuesday, the 5th after admission, the patient vomited several times a material which resembled that passed by the bowels. The passages were of the same character as on the previous day and were five in number. Her temperature was 100½° in the morning and 102° in the afternoon.

The area of dulness over the abdomen was now for the first time noticed to be decreasing.

Wednesday (6th day).—Several stools, no vomiting. The patient is rapidly improving in health and spirits. The abdomen is very flatulent, but the dulness only exists on the left side.

Thursday (7th day).—Patient is still improving. *Physical examination* reveals dulness on the left side extending half-way to the umbilicus, the remainder of the abdomen being tympanitic. She suffers no pain except upon pressure, due, as it was thought, to the gas generated in the cyst, from which the fluid was being gradually withdrawn by a rupture into the intestines. For a week after this, the patient improved in every respect. The stools were of the same character as before, but less frequent. The temperature was not above 100°.

The continued drain upon the system and the constant presence in the alimentary tract of the cystic fluid caused an irritability of the stomach, denoted by frequent vomiting of non-digestion of food, which could not be controlled, and she sank gradually after the third week in a typhoid state, in which she died two weeks later.

On the 30th day after admission, phlegmasia alba dolens of the left leg appeared, but it occasioned no particular distress, and was treated in the usual way.

Owing to the opposition of relatives, the autopsy was meagre and unsatisfactory. An incision in the median line, from the umbilicus to the pubes, dividing the peritoneum, revealed a sac which was bound down to the peritoneum by strong adhesions both recent and old. There was but little fluid in the peritoneal cavity. Upon opening the cyst, a quantity of gas escaped and it collapsed to about one-third its former size, about two quarts of purulent fluid remained. An opening was discovered leading into the ileum, not far from the ileo-cecal valve. To the ileum the cyst was bound down by adhesions which were with great difficulty broken. The cyst was attached by a short pedicle to the left Fallopian tube, involving the ovary of that side.

Dr. Gillette further remarked that the question of removing a suppurating ovarian cyst was at all times a serious one. In this case the autopsy showed that an operation would have been hazardous, as the adhesions to the intestine through which it finally ruptured were old and very firm. He had had a similar case, where a suppurating ovarian cyst existed with great depression of vital power ; T., 103° ; P. 130, but, notwithstanding, she recovered after an operation.

In neither of these cases was there any apparent cause for the suppuration of the cyst. In the one operated upon, an ulceration existed which would probably have ruptured, had the operation been delayed twenty-four hours longer.

Dr. Hunter remarked that Dr. Keith had reported a considerable number of cases where he had performed the operation successfully under these circumstances.

Dr. Ward referred to a case at the Woman's Hospital, where, during a consultation, the temperature ran up to 104°, and remained so for four days. There was no peritonitis. After the operation the temperature fell to 99.5, and she bid fair to recover, but died on the third day from the result of an accident connected with the operation.

Dr. Munde said that patients in whom suppuration occurred, very frequently recovered after ovariotomy. He thought there were between twenty and thirty cases reported. Personally, he was in favor of operating, for it seemed to him that the surgeon who did not operate did not do his patient justice.

Dr. Skene remarked that it was very difficult to decide whether a cyst is or is not inflamed, and he was inclined to think that it was impossible to tell, where the cyst is inflamed, whether the peritoneum is involved or not. The first case which he treated for this condition came into the hospital in a very favorable state for operation, with a large monocyst. In order to make certain the diagnosis, he removed a portion of the fluid with a trocar and canula, and found it clear. The cyst inflamed, and she came very near dying. As she was getting better, she complained of pain near the umbilicus, and a small amount of pus was noticed to escape on pressure. After a while the entire contents of the cysts were discharged The fluid was thick and creamy. She recovered perfectly. He had since heard that she had phthisis. He had operated on one case, where inflammation of the sac existed together with peritonitis. The patient was 62 years of age. She bore the operation well and did well for a time, but one day she reached out of bed for a glass of water, and died immediately after.

Dr. Skene said that his first case had taught him not to touch the cyst until he had an opportunity to remove it.

Dr. Hanks thought no rule could be established for these cases.

He had seen the hypodermic syringe used with impunity. If the tumor be very much distended, even a hypodermic needle might be dangerous, as the fluid could be forced into the peritoneal cavity, and thus cause peritonitis.

Dr. Gillette said it was very difficult to account for the behavior of some of these cases after aspiration. He had a case, about five days ago, of a woman with phthisis coexisting with a very large abdominal tumor, which seemed to be an ovarian cyst. All thoughts of operation were given up on account of the condition of the lungs. Dyspnea soon became so great as to determine aspiration, but as the aspirator was out of order, a common trocar and canula was used. Nothing but a jelly-like mass came through, and this with very great difficulty. She was therefore left alone, and, contrary to expectation, had no bad symptoms. The wound oozed somewhat. To-day, four days after the tapping, she was up and feeling much better for the tapping.

Dr. Munde thought there were some kinds of ovarian fluid which would not produce peritonitis, and some cases where almost anything could be done. He had a case in which he had used electropuncture twenty times, with fourteen cells, and there was no reaction whatever. The electrolysis had been of no service.

Dr. Dawson asked whether it would be a justifiable procedure to puncture a patient even with a hypodermic needle in the office, and then allow her to go away, losing sight of her for a few days.

Dr. Munde would not hesitate in the least. He had done it time and time again. It is a justifiable operation; only, if done, the surgeon must be ready to operate.

Dr. Gillette always aspirated in suspicious abdominal tumors, with the hypodermic needle, and never saw any evil results therefrom. I one case he had aspirated with a very fine needle. The patient had phthisis. Considerable fluid was obtained. Severe peritonitis followed, and the patient died in forty-eight hours. He would never hesitate to introduce the hypodermic needle, and believed it absolutely essential to diagnose ovarian cysts.

Dr. Munde mentioned a case he had seen with Dr. Tauszky. The doctor had tapped her, and a few days afterwards tried electrolysis once. She got up an attack of peritonitis.

Dr. Ward thought there was too much tendency to refer bad results to the use of the aspirator. He had seen bad results, even inflammation, follow a too severe examination. He had seen the hypodermic syringe used very many times in the office and dispensary and never knew any bad results to follow.

Dr. E. W. Jenks, of Detroit, who was present as a guest, said he formerly used the aspirator and the hypodermic syringe in ovarian cysts without fear, but now he had come to look upon the aspirator as a dangerous instrument, unless adhesions existed between the cyst and the abdominal walls.

He had seen one case where inflammation followed the aspirator, and one case where the aspirator was used and the patient died within a week. He would always require a patient to remain in bed for a week after an aspiration, and never thought of doing it in his office.

He had operated in one case where peritonitis existed, the peritonitis having been caused by violence suffered during a storm on Lake Superior. She did well for nine days and was considered convalescent, but then she failed and died on the eleventh day, apparently of exhaustion. The autopsy did not show any extension of the peritonitis after the operation, or much fluid in the abdominal cavity.

ADVISABILITY OF PERFORMING OVARIOTOMY IN PHTHISICAL PATIENTS.

Dr. Gillette asked what especial evil would be apprehended in doing ovariotomy on a patient where there was phthisis, but where there seemed a preponderance of danger from the ovarian cyst.

What would be the danger of attempting to remove an ovarian tumor, unless there was so much lung tissue destroyed that it would be dangerous to keep the patient under the influence of ether for the required length of time?

He had not operated on his case as she was too far gone, but in another case he would not hesitate to operate unless the case were so far gone that life would only last a few months in any event.

Dr. Hanks considered the use of ether in phthisical patients to be dangerous.

Dr. Jenks referred to the experience of Dr. Bennet in the south of France. He saw many uterine cases complicating phthisis and by the early cure of the uterine cases he arrested the phthisis.

Dr. Skene said he never hesitated to restore the cervix or perineum in case of tuberculosis in the first stage or before it was far advanced, and when there was very little doubt that tubercular disease would advance in spite of any treatment. He would not hesitate to operate unless the condition of the lungs were such as to make the use of an anesthetic dangerous.

Dr. Garrigues considered that the question depended very much upon the condition of the patient, whether she is in the beginning of the disease or in any other stage. He had seen cases where decided relief had been experienced after getting rid of the ovarian tumor, but if the disease of the lungs is advanced, there is not only difficulty in administering anesthetics, but in the operation itself. The operation is not so well borne, and the condition of the patient is very apt to be worse than before. He did not think it right, as many books upon ovariotomy advise, to say that phthisis is a contra-indication to ovariotomy. That statement ought certainly to be qualified.

As for operating upon the uterus, the gravity of the case must be taken into consideration. If it is an operation such as was spoken of by Dr. Skene, he would not hesitate; but if it is a serious operation, such as enucleation of a fibroma, one should think twice about it.

Dr. Gillette thought, in performing ovariotomy, the surgeon should be guided very much by the degree of cough present. Some cases of incipient phthisis, for instance, have a very severe cough. Under such circumstances it would not be prudent to operate. There is nothing which will move the abdominal walls like coughing.

Dr. Garrigues thought coughing might be relieved by chloroform or ether.

Dr. Gillette spoke more particularly in reference to the effects of coughing after the operation. It would disturb the union of the wound. He did not refer to the act of coughing during the operation, for that would no doubt be relieved after the patient had arrived at a certain degree of anesthesia.

Dr. Watts had never had occasion to consider this question in connection with ovariotomy He did not see how the presence of phthisis would militate against an operation for restoration of the cervix in laceration of the same. He had operated twice when there was quite marked phthisis and a good deal of cough and expectoration, and the operation succeeded as well as under more favorable circumstances. As regards ovariotomy, the question would be: How far does phthisis affect the general health of the patient? If she is very much emaciated, the operation would be contra-indicated.

Dr. Harrison concurred with the views of those who contend that phthisis would not contra-indicate an operation—certainly not in its incipient stages.

In regard to cough, he did not see that that would prove an insurmountable difficulty, for it could be controlled by opiates, and that might suggest the propriety of using chloroform instead of ether, as the latter undoubtedly irritates the air-passages more than the former.

Dr. Hunter related a

CASE OF FIBROMA OF THE VAGINA

which he saw for the first time three years before. She was then pregnant, and the question was, whether or not it would be advisable to operate, as a great portion of the vagina would have to be removed. Its origin was about half-way up the posterior wall of the vagina. When first seen it was small; now it has grown so that it reaches nearly to the neck of the uterus. It is an irregular dense mass, and elastic to the feel. It is the only case of the kind that he had seen.

Dr. Munde said that the usual treatment would be excision.

Dr. Hunter said the tumor was so extensive that he did not see how such a procedure would be practicable, and unless she becomes pregnant again, he did not apprehend any more trouble. It would be difficult to dissect it out without taking away the wall of the vagina; the tumor is not movable on it.

Dr. Hanks referred to a case of

AMPUTATION OF THE HYPERTROPHIED LIP OF THE CERVIX BY THE ELASTIC LIGATURE,

simply on account of the simplicity of the operation.

The patient was seen by him on the 18th of October last. She had been suffering from complete prolapsus of the uterus. He found that she had also had double lateral ulceration of the cervix, running back to the vaginal junction, on both sides. The anterior lip was excessively hypertrophied, so much so that it projected an inch over the posterior lip. She came to the Dispensary (Dr. Chase was assisting him at the time), and on examination he came to the conclusion than an operation could be performed very easily and safely at any time. He swept the scalpel around underneath the lip, so as to make the lip project forward about as much as the posterior lip, applied the ligature, fastened it with a bead, and sent her home. On the fourth day, the anterior lip sloughed off, and there has been no secondary hemorrhage or pain, and she had not experienced any trouble for four succeeding weeks, when the wound entirely healed.

CATGUT SUTURES.

Dr. Jenks inquired concerning the opinions and experience of the members of the society in regard to the use of catgut sutures, and as to their innocuous character.

Dr. Hunter referred to an article in the last number of the *Medical Times and Gazette*, in which the writer had used catgut extensively and had a large proportion of recoveries. There was no hemorrhage following its use.

Dr. Ward observed that the use of catgut in ovariotomy is pretty well given up in this city. Dr. Peaslee had discarded it.

Dr. Jenks had made use of it in a case of ovariotomy last year. He used very fine catgut, and also silk. In the post-mortem, thirteen days after the operation, he found that the catgut ligature had produced very much more irritation than silk. He had made no observation as to how soon they coalesce with the living tissue.

Dr. Ward had used it five or six years ago, but had given it up. He believed Dr. Thomas had also abandoned its use.

Dr. Skene had ligated the pedicle with it once, and made the post-mortem six days after, and then wished that he had not used it. The knot was made very strong, and so there was no secondary hemorrhage; but the catgut was very much softened, and there was a great deal of suppuration around it.

Dr. Jenks remarked that a London physician had used catgut in Cesarian section, and generally found the knot untied.

Dr. Peaslee was very much interested in the subject. When the matter was first proposed, he experimented with it in order to test its ability. He would not now use catgut as a ligature unless the vessels were accessible, so that he could get at them at any time, as, for instance, for the closure of an incision into the peritoneal cavity, after ovariotomy. He did not see that there was any advantage in its use. In fact, there were objections to its application internally. In the first place, if you have a large vessel and you have got to inclose it out of sight, or the possibility of getting at it in case of accident, you want to be absolutely sure that your ligature is perfectly secure and safe. If any one will take the trouble to tie a knot of catgut around a stick, and put it in water, keeping it there twenty-four hours, when taken out it will be found untied. Place it again in water, allowing it to remain there a certain time, and it will be found useless when taken out. This will be found true three times out of five. As to its being absorbed, it will be absorbed after a while, but there is a liability to secondary hemorrhage also. He therefore considered his experience as against the use of catgut as a ligature.

CASE OF SPONTANEOUS DETACHMENT OF A PEDICULATED SUBPERITONEAL FIBROID.

Dr. Harrison was called to see a case, three or four years ago, in which he diagnosticated a subserous fibroid attached to the uterus by a very thin pedicle and movable. Some time afterwards, she had an attack of local peritonitis; the tumor then became fixed. Afterwards she had dropsy, for which he tapped her; then she rapidly depreciated in strength. He had occasion to tap her again. Some months afterwards she died. At the post-mortem, it was found that the fibroid tumor had become detached from the stem, and had become wedged among the viscera. The uterus was nearly its natural size. The tumor could certainly not have originated from the ovaries, for they were both intact and showed no evidence of disease. He was very sorry afterwards that he had not operated. The tumor was attached by a long pedicle.

Dr. Peaslee inquired how the tumor was nourished.

Dr. Harrison replied that it was attached to the broad ligament by one side. He supposed it derived its nourishment in that way. When he first saw it, the tumor was in a great deal higher line than it was afterwards; it had gravitated downward.

Dr. Peaslee observed that it was a received fact in the pathology of tumors, that the mere contact with the peritoneum is sufficient to prevent the loss of their vitality.

CASE OF DETACHED OVARIAN CYST.

Dr. Peaslee mentioned a case of an ovarian cyst which had lost its pedicle entirely. This class of cases are by no means unknown. He was requested to go to a town in the interior of this State, about five years ago, to perform ovariotomy. Upon learning something of the case, he found that the tumor had been first detected about ten years before. After it had grown about two years, it ceased growing entirely for six or eight years, then it began to grow again. It was very singular that he could find no connection between the first cessation of growth and the second accession. It was thought by her friends that she had hernia, for there was great suffering, referable to the inguinal region. It kept her in bed some time. After she got up, the tumor grew no more. Finding no relief after the tumor began to grow a second time, Dr. P. was called upon to operate. The omentum was found to be quite extensively adherent, and there was near it an artery of peculiar development, about the size of the brachial artery, which divided into a great many branches. Upon putting his hand into the cavity, he found that he could run it all around the tumor; he found no pedicle whatever; all the attachment it had was that referred to above. He then proceeded to ligate the vessels and removed the tumor. He found it to present all the characteristics of an ovarian cyst; there could be no doubt as to what it was. There was a notch in the broad ligament showing that, at the time of the attack, there had been a pedicle. It had become twisted around and around, so that the circulation had been cut off, and it ceased growing. It had been nourished, no doubt, from contact, from which circumstance this series of larger vessels had sprung up, the vessels being larger in proportion as necessity required. This was the only case met with by him in practice, but such cases are known to exist, and, he supposed, came under the same category as that which Dr. Harrison speaks of, although that was a fibroid; but the principle that a cyst or fibroid may derive nourishment from mere contact with the peritoneum only is a very important one, and illustrates the fact that, if the pedicle is cut off and an inch of the stem is left, the tumor will attach itself wherever it happens to touch, and it will get nourishment enough to prevent it from degenerating.

Stated Meeting, January 22, 1878.

The President, Dr. A. J. C. Skene, *in the Chair.*

ENDOSCOPE FOR THE FEMALE URETHRA AND BLADDER.

Dr. Skene exhibited an endoscope which he had employed for some time in examinations of the female urethra, bladder, and the rectum. How much originality there was in the instrument he had not had time to ascertain.

The instrument consisted, *first*, of a glass tube, precisely like an ordinary test tube, varying in size according to the purpose for which it is used; and *second*, a section of a cylinder made black and having a mirror attached at a rather acute angle at its distal extremity.

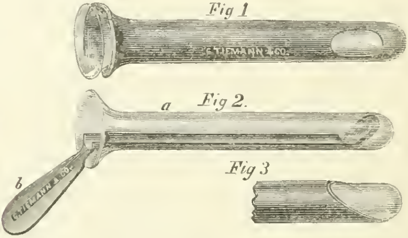


Fig 1

Fig 2.

Fig 3

The glass tube is introduced first; into that the cylindrical section with the mirror, and then with an ordinary concave forehead mirror, light is thrown in upon the mirror within the tube. The cylindrical section can then be moved forwards or backwards or turned around, and thus the operator is able to explore the canals or cavities into which it is introduced. The advantages claimed for the instrument are, that, being a closed tube, it can be introduced into the bladder without escape of urine; and the operator is not annoyed by evaporation and condensation on the mirror; for the tube protects the mirror and the entire urethra can be explored with the greatest facility.

For exploring the rectum, the ordinary closed speculum with fenestrum can be employed in addition.

If, after having located the disease, it is desirable to make an application, it can be easily done by removing the glass tube and then introducing the cylindrical section and mirror only.

With reference to its use in exploring the bladder, a longer tube is required than for urethral examination, and Dr. Skene has not been able to satisfy himself by the use of tubes of the size ordinarily used in examining the urethra. After dilatation of the urethra, however, a larger and longer tube can be introduced, and then, by pressure through the vagina below and the abdominal wall above, the walls of the bladder can be brought in contact with the tube and opportunity for a pretty thorough exploration offered.

It is to be remarked that the pressure produced by the tube in distending the urethra and rectum diminishes the circulation to such an extent that the mucous membrane presents a pale pinkish-white appearance. This fact in no way interferes with diagnosis, but, on the contrary, makes the contrast greater between the appearance presented by inflamed portions, ulcerations, and fissures, and healthy mucous membrane.

An objection to the instrument is the danger of breaking the glass tube, but, with ordinary care, it is believed that such an accident can be avoided. It is proposed, however, to have the tube guarded with metallic tips, for the purpose of preventing such an accident.

Dr. Pallen asked if there is always pallor of the urethra when the instrument is introduced.

Dr. Skene answered that, if the urethra is healthy, it will present a pale pinkish-white color throughout; a normal urethra, however, is not very common.

Dr. Noeggerath suggested the following addition as aids in examining the bladder. One great difficulty in examining the bladder is that we are not sure as to how much of the viscus has been explored. In most cases, the examination extends no farther than to the portion near the entrance of the urethra. It is very difficult to explore farther, because of the folded condition of the walls of the bladder, and from the fact that the bladder always contains urine. It is exceedingly difficult to obtain a clear view of the mucous membrane of the bladder for those reasons. To obviate this difficulty, he would suggest the addition of a long tube through which warm air can be injected, and thus fully distend the bladder. Then, when the instrument is moved, a view of the entire inner surface of the organ can be obtained.

Dr. Skene remarked that an objection to Dr. Noeggerath's suggestion would be the extreme pain occasioned by injecting the bladder with air.

Dr. Noeggerath proposed to substitute carbonic acid gas for air, according to the method of Ruthenberg.

Dr. Skene accepted the suggestion as valuable, and one which he should put upon trial.

Dr. Chamberlain asked if there had not been serious accidents reported in consequence of using carbonic acid in that manner.

Dr. Noeggerath answered that several cases had been reported in which an accident had followed injections of carbonic acid into the vagina and uterus, but he was not aware that any unfavorable results had followed its use in the bladder.

Dr. Chamberlain remarked that he was not able to understand why substances brought in contact with the broken mucous membrane of the bladder might not produce the same effect as when brought in contact with a denuded surface in the uterus or vagina.

Dr. Noeggerath replied that the mucous membrane of the uterus and its appendages is somewhat different from that found in the bladder. That is shown by the much more thorough solution and absorption of medicines when introduced into the uterus than into the bladder. He had seen narcosis produced by the introduction of very small quantities of opium into the uterus, whereas the same quantity introduced into the bladder would have produced no effect whatever.

Dr. Skene asked if there was any proof that the normal mucous membrane of the bladder absorbed at all. In his experience he had seen no evidence that such absorption took place.

Dr. Noeggerath remarked that he had repeatedly injected opium into the bladder, and had never seen any evidence that absorption occurred. He was of the opinion that, in all the cases in which it had been supposed absorption of the elements from decomposed urine had occurred, the mucous membrane of the bladder had been in an unhealthy condition.

Dr. Ward referred to a case of acute cystitis in which half a grain of morphia and twenty grains of hydrate of chloral were injected into the bladder every two hours with the result of relieving the pain and securing rest for the patient. It was necessary, in this particular case, to repeat the injection about every two hours, in order to keep up the continuous effect of the remedies.

Dr. Pallen suggested that it was the chloral in Dr. Ward's case which afforded the relief. He had repeatedly injected opium into the bladder for the purpose of relieving pain, and had never seen any effect produced; he had, however, seen immediate relief follow the use of chloral.

Dr. Skene remarked that it was well known that Braxton Hicks claims that relief from pain can be obtained by injecting a solution of morphia into the bladder.

Dr. Pallen remarked that in ordinary cases of endo-cystitis he had derived more satisfactory results from the use of injections of warm water and carbolic acid than from any other remedy which he had employed. His method is to distend the bladder moderately with a solution of pure carbolic acid, forty to sixty grains to eight ounces of water. The relief afforded is almost immediate in some cases; in others such favorable results might not be obtained: when obtained, these good effects sometimes lasted a week.

Dr. Chamberlain referred to a case of cystitis in which the urine was found swarming with bacteria. The patient, a medical man, suffered intensely, but was cured by two injections of a solution of borax in water.

The injections destroyed the bacteria, and in that manner, it is supposed, cured the cystitis.

Dr. Cleveland presented a specimen of

INTERSTITIAL PREGNANCY.[1]

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[1] See April number.

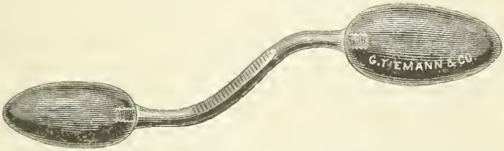
Stated Meeting, Feb. 5, 1878.

The President, Dr. A. J. C. Skene, *in the Chair.*

Dr. H. T. Hanks exhibited a

SET OF INSTRUMENTS FOT THE RAPID DILATATION OF THE CERVIX UTERI DURING PREGNANCY.

They consist of a graduated set of hard rubber bulbs, attached to a plain handle by a screw, and resemble the metallic dilators of Dr. Peaslee, only of much larger sizes. Some time ago Dr. Hanks assisted Dr. W. T. Lusk in the removal of a uterine polypus, and at that time witnessed the failure on the part of Barnes' dilators to effect the dilatation required; the failure was on account of rupture of the india-rubber bags. It was to obviate such an accident that his set of hard rubber dilators had been devised, and they were designed to be used when Barnes' dilators did not answer the purpose. Dr. Hanks then referred to a case of abortion to which he was recently called, and in which he seized the cervix with a tenaculum, introduced a small-sized dilator, quickly followed it with the two next larger sizes, gave the woman a hypodermic injection of ergot, and within three-quarters of an hour from the time he left his own house the ovum was completely removed.



How much originality he had shown in devising the instrument he was not able to say, nor how serviceable they would prove, for he had used them in only one or two cases.

In answer to a question, Dr. Hanks remarked that he had not found Molesworth's dilator a reliable instrument.

Dr. Noeggerath stated that his experience regarding Molesworth's dilator had been different from that of Dr. Hanks. Since the dilator had been modified, now about a year, he had employed it in three cases of abortion at the third and fourth months, and it had proved to be all that could be desired in the way of a dilator.

Dr. Noeggerath further remarked that he thought there was more than one case upon record in which a Barnes' dilator had burst in the cavity of the uterus. But, if the soft-rubber dilators were tested carefully before being used, and were not distended too largely, such an accident was not likely to occur.

The instruments devised by Dr. Hanks seemed to be useful, and if they continued to do what had been reported, they doubtless would be of service.

Dr. Hanks remarked that he was not at present prepared to recommend his dilators in labor, but simply for effecting rapid dilatation of the cervix in cases of abortion when saving of time was an object, and for the removal of uterine polypi.

His experience with Molesworth's dilators had been that they were constantly getting out of repair.

Dr. Chamberlain said that he had found Molesworth's dilator a very efficient and satisfactory instrument. Theoretically the instrument was all that could be desired, and with occasional exceptions on account of liability to rupture, the bags were all that could be desired practically.

He had used them successfully at term, at the 8th, the 7th, and the 6th month, and even earlier.

THE USE OF ERGOT IN ABORTION.

Dr. Noeggerath stated that Dr. Hanks had made an incidental remark, in relating the history of his case, to which he would direct attention. The doctor had mentioned that, after the dilatation had been effected, he gave a hypodermic injection of ergot, and that the fetus was quickly expelled.

That practice was much employed, and was one which was advocated upon physiological grounds. His experience, however, had been that, in cases of abortion occurring in the 2d or 3d month, ergot did more harm than good; and for the following reasons:—Early in his practice he was accustomed to give ergot, whenever in cases of abortion he could reach the ovum with the finger or some instrument, and in cases in which he expected it soon to be expelled to within reach. Very soon, however, he found that, when ergot was given, the ovum, instead of advancing and thus being brought into a more favorable position, was caught tightly by the internal os which, before the administration of the ergot, had been in a relaxed condition. In other words, the internal os was thrown into a kind of spasm by the use of ergot, and so held the ovum tightly.

Instead of ergot, therefore, he had come to use belladonna and opium to diminish the contraction of those fibres, and with much more favorable results than obtained by the use of ergot. He had abandoned the use of ergot in cases of abortion at the second or third month, because he believed that, as a rule, it did harm; and that it did so by exciting contraction in the circular fibres of the uterus, thus retaining the ovum more firmly than it was before the drug was administered.

He used belladonna because he was sure that it not only did not produce contraction of the circular fibres, but rather removed such contraction if it was present.

Dr. Noeggerath did not wish to be understood as contradicting the experience which Dr. Hanks had brought before the Society, for he thought it possible, after a cervix had been rapidly and thoroughly dilated, and before any previous pains had operated upon the uterine tissue, if the ergot were given at the proper moment, that the fetus would be expelled; but, as a rule, the effect of ergot was injurious rather than otherwise.

Dr. Thomas remarked that he had not had any experience which would lead him to assume the position taken by Dr. Noeggerath, with regard to the effect produced by ergot. In the earlier months of pregnancy he had not used ergot when the cervical canal was closed, because it was apt to do harm. But under the circumstances in which Dr. Hanks had employed it, that is, after full dilatation either artificially or naturally had been produced, he had been under the impression that ergot assisted the expulsion of the fetus even at the end of the first month of pregnancy.

He was not able to recall a single case in which, after the cervix had been fully dilated, it had contracted under the influence of ergot.

Even at full term he did not employ ergot unless the exit of the fetus was secured by an almost complete dilatation of the cervix.

The question under discussion, however, was simply one of causing uterine contraction.

DISCUSSION ON THE TREATMENT OF RETENTION OF THE PLACENTA AFTER ABORTION.

Dr. J. H. Pooley, Sr., who was present as a guest, asked the following question: In cases of early abortion, if the placenta is retained after expulsion of the fetus, and there is no hemorrhage, how long is it safe to wait before removal of the placenta by artificial means?

Dr. Skene said that, so far as his own practice was concerned, he would not wait more than five minutes in cases in which the os was fully dilated. He had always taken care that every portion of the ovum should be removed as quickly as possible, in order to protect the patient from the dangers of septicemia. When there was complete dilatation, he did not wait for the effect of ergot, but at once removed the contents of the uterus by means of a loop of soft wire, a flexible curette, and he had never had any occasion to regret such practice. If there were symptoms of hemorrhage, because of imperfect contraction of the uterus, then ergot could be administered with advantage.

When the cervix was closed, he would wait only just long enough to dilate it before removal of the placenta.

Dr. Noeggerath indorsed the views expressed by the president. He regarded it as the only safe practice to remove the placenta at once, if the cervix was dilated; and if it was not dilated, to immediately produce dilatation, so that the placenta could be immediately removed.

There were conditions, however, in which it was impossible to strictly follow out these rules. If, for instance, the miscarriage had lasted a couple of days or more; the doctor was called and found that the woman had lost a large quantity of blood; she had been exsanguinated at the time the fetus was expelled and was in a state of collapse. Under such circumstances he would dislike to perform the operation, especially when the cervix was not sufficiently dilated to permit the easy removal of the placenta. Those were the cases probably in which the operation could not be performed. and yet they were precisely the cases in which there was the greatest danger in waiting. For, if the patient were anemic, or in a condition of exhaustion, the chances of consecutive septicemia were increased tenfold.

Under such circumstances the physician could be guided only by common-sense principles which govern the management of individual cases. We should wait in those cases, however, only such length of time as is absolutely necessary before making an attempt at removal of the placenta. It was only in such cases that delay was indicated.

Dr. Thomas thought that the question asked by Dr. Pooley was not so easily answered, but that he had asked one of the knottiest questions in obstetrics. It certainly was one of the most difficult of questions to answer at the bedside. His feeling was that the time which we could leave the placenta in the uterus with safety could not be estimated. For, as soon as decomposition of the placenta began to take place, septicemia might occur, and, when that morbid process was developed, removal of the placenta would not arrest it.

There was a class of cases which it was very difficult to answer the question that had been asked.

For example. we are called to a case in which the fetus has been expelled, the process of abortion has ceased, and the cervix uteri entirely closed. Under such circumstances it is no easy matter, even for an expert, to dilate the cervical canal and remove the placenta. If present at the time of the expulsion of the fetus, there is no question regarding the propriety of removing the placenta at once.

But suppose we are called to see a case one week after the delivery of the fetus; there are no symptoms of septicemia; there is no hemorrhage; there are no unfavorable symptoms of any kind; then the question arises, whether or not we should force the cervix open, and deliver the placenta by artificial means.

Dr. Thomas regarded the question under such circumstances as one not easy to answer.

Suppose, again, that we are called to a very nervous woman under these circumstances—one upon whom any operation whatever would produce a profound effect: if the cervix were open sufficiently to permit the introduction of an instrument, the question is an open one as to whether resort should be had to operative interference. It might be well, if the curette could be readily introduced, to remove the remains of the ovum at once.

Reference was made to a case in which a consultation was held with Drs. Eliot, Barker, Emmet, and Metcalf. The woman had had a chill, and was suffering with violent fever. The chill was that due to decomposition of the placenta. The majority of the consultation decided that it was best to leave the placenta in the uterus; it was at the third month of utero-gestation. Dr. Thomas dissented. An opiate, however, was administered, septicemia was not developed, nothing was heard of the placenta, and the woman had lived to bear two children since. Notwithstanding the favorable termination of the case, he should again advocate the immediate removal of the placenta under like circumstances.

If the woman is bleeding in consequence of retained placenta, he never invades the cavity of the uterus. His plan is to avail himself of the hydrostatic pressure of the blood by tamponing the vagina after Sims' method, when the blood will percolate between the deciduæ, rip off the placenta, form a large clot in the uterus, subsequently to be expelled by uterine contraction. If the placenta is not expelled with the clot, the cervix will be so dilated that an instrument can be readily introduced, and the mass removed.

If the placenta is in the uterus, there is no hemorrhage, and the cervix is closed, it is an open question whether or not the canal should be forcibly opened, and the placenta removed.

If there is evidence of septicemia, he is in favor of dilating the cervix, so that the placenta can be immediately removed.

When the subject lately came before the New York Academy of Medicine, he was not only surprised, but a little shocked to find so many men who were in favor of allowing the placenta, as a rule, in these cases to remain undisturbed.

Dr. Noeggerath thought that Dr. Thomas had specified examples which illustrated the position taken by him when speaking of cases in which the woman is very anemic. He fully coincided with Dr. Thomas in the opinion that there were numerous cases of retained placenta in which operation was not possible when the condition of the patient was taken into consideration. For instance, he saw a woman who was flooding, and at the same time was suffering from septicemia and perimetritis; he gave the opinion that the placenta, under those circumstances, must be left undisturbed, that the patient must of necessity take the chances; for, if the operation were resorted to, the perimetritis would probably be increased, and the case would almost certainly terminate fatally. It proved that the conclusion arrived at was right, because within twenty-four hours the ovum was expelled spontaneously.

At the same time Dr. Noeggerath coincided with the president in the statement that, as a general rule, the placenta should be removed at once, and that the physician should never wait unless certain conditions were present which forbade the operation.

Dr. Harrison said that in those cases of abortion in which the placenta remained after the expulsion of the fetus, if the cervix was pretty well dilated, he resorted to intrauterine injections of hot water. These injections stimulate the uterus to contract, and he had seen the entire mass expelled within a few minutes after the adoption of that method of treatment. If the cervix is not well dilated, he resorts to the use of a sponge-tent, and then follows with hot-water injections. The water should be carbolized, so that the uterus would be disinfected at the same time it was stimulated to contract. In that way there is no risk of developing septicemia.

Dr. Skene maintained that the question under discussion could be answered upon general principles, and that he did not feel like changing his first answer in the least. The sooner the uterus is emptied the sooner can the physician feel that the woman is safe. If the cervix is not dilated, which is a rather rare occurrence, and there is no hemorrhage, it should be dilated at once, and the placenta removed. If hemorrhage exists, he would tampon the vagina, and, if need be, the cervix.

If he was called to a patient who had aborted one, two, or three days before, and no unfavorable symptoms were present, nothing should be done. He had seen a case in which the fetus was expelled, but the placenta was retained and carried six weeks, and at the end of that time expelled in a perfect condition. This was an exceptional case, and in no way interferes with the soundness of the general rule that the placenta should immediately be removed.

Dr. Munde thought the treatment of retained placenta in abortions might be formulated as follows:

If the placenta can be removed without undue violence, either by means of the fingers or some instrument, it should at once be removed.

If, for any reason, it cannot be readily removed, then tampon the vagina and administer ergot. The tampon, if necessary, can be renewed daily, at the same time making free use of disinfectants.

If, after two or three days, the placenta has not been expelled under such treatment, operative procedure may be resorted to for its immediate removal, at the same time making free use of disinfectant injections, both before and after the operation.

If the os is closed at the time the case is first seen, and no symptoms of septicemia and no offensive discharge present, use disinfectant vaginal injections, and watch carefully for symptoms of constitutional trouble. If these arise, dilate at once by dilators in preference to sponge-tents, and remove the placenta under antiseptic precautions.

INFANTILE LARYNGISMUS PRODUCED BY A FEATHER IN THE INTESTINE.

Dr. Chamberlain reported a case which had fallen under the observation of a medical friend. An infant, æt. five months, was supposed to be suffering from membranous croup. The hoarseness began early in the morning, increased through the day, and when the medical attendant arrived in the night, there were severe symptoms of laryngeal obstruction. It was stated by the mother that for two or three days the child had seemed to be suffering from colic, and that a carminative mixture was administered with the effect of relieving the pain, and at the same time producing constipation. Learning of the constipation, it occurred to the doctor to examine the rectum. In the pouches of the rectum was found a plug, which, when removed, was covered with puriform mucus, and measured 3½ or 4 inches in length. As soon as the plug was removed, the symptoms of croup immediately disappeared. When the plug was dissolved, it was found to have for its nucleus a *white feather*. It was regarded as a case of laryngismus stridulous, produced by irritation in the rectum.

Dr. J. Foster Jenkins narrated the history of a case of

IDIOPATHIC ERYSIPELAS OCCURRING IN AN INFANT TWENTY-THREE DAYS OLD.

The disease began in the groin, spread rapidly, and by the end of the fourth day had extended downwards as far as the knees, and upward as high as the umbilicus. The entire surface between these two points was intensely inflamed. On the morning of the fourth day, the child seemed somewhat improved, but at 2 P.M. the doctor was called, and found the child in what he supposed to be a dying condition. The intensely red surface had become pallid, the lips and finger ends were of a deep purple color, breathing had apparently ceased, and the heart's action was very feeble. The doctor succeeded in getting a small quantity of spirits into the stomach, and began artificial respiration. At the end of six hours, respiration was tolerably well established, but the artificial method was continued, at intervals, five hours longer, making in all *eleven* hours before it was thought to be safe to leave the child to the care of the nurse and the mother. In a short time, convalescence was fully established.

It was regarded as a case of collapse, such as might arise from a severe burn, extending over a large portion of the surface of the body.

Stated Meeting, February 19, 1878.

The President, Dr. A. J. C. Skene, *in the chair.*

Dr. Barker related

THREE CASES OF PUERPERAL SEPTICEMIA

which had recently fallen under his observation, which had certain features in common sufficient to characterize them, and yet were quite different in important general features. He did not wish to wake up the old discussion as to the nature and characteristics of septicemia, for, that there was a specific affection liable to occur in connection with women in abortion or the puerperal condition, accepted and recognized by all as septicemia, was not a question for discussion.

Case I.—A lady, 23 years of age, in the third month of pregnancy, was, while on board of a steamship, seized with hemorrhage some five or six days before her arrival at New York. The hemorrhage at first was quite severe, but during the latter days of the voyage was not very great. The ship surgeon was called, but the lady would not permit him to make an examination. After the patient had arrived at a hotel in the city, Dr. Barker was called and, at his first examination, removed an extremely fetid ovum with clots. The patient at that time had symptoms of septicemia, such as tympanitic distention of the abdomen, quick pulse, sunken anxious countenance, etc. Within two weeks, septic pneumonia developed, and the case terminated fatally.

Case II.—A young lady, the daughter of a physician, was in the eighth month of pregnancy, when Dr. Barker was called in consultation on account of the presence of albuminuria. There was sudden and almost complete amaurosis, and the urine contained fully eighty per cent of albumen. The patient was bled, counter-irritation was applied to the nape of the neck, digitalis and iron were administered, and a milk diet instituted.

In the course of three weeks, the albumen had disappeared almost entirely from the urine, and, contrary to his usual experience, the patient was restored to health for at least ten days previous to her confinement.

Internal medication was continued, however, up to the time of labor, which came on in the evening at about 9 o'clock, was normal, and completed before 11 o'clock. Dr. Barker arrived at 11.15, and an attempt had already been made to remove the placenta by introducing the hand into the uterus. It was suggested that recourse be had to compression and expression, and the placenta was soon expelled.

During the first twenty-four hours subsequent to labor, the patient did very well. At the end of that time, the temperature rose to 103° and 104° F., extreme tympanites was developed, but there was *no marked tenderness or pain.* Antiseptic vaginal injections, quinine in large doses, combined with bromide of potash, opiates in moderate quantity, were all employed. On the third day, mania of the most intense and violent character was suddenly developed, continued a few hours, and the patient died.

Case III.—This case was seen in consultation with Dr. J. P. P. White, of this city. Dr. White was called to see a woman who, sixty hours before, had been delivered with forceps by a homeopathic practitioner. The labor had a duration of about twenty-four hours, and then was terminated by means of the instruments. On account of the great suffering which the woman experienced, the friends became indignant and sent for Dr. White, who, on learning the condition of the patient, summoned Dr. Barker.

It was found that no urine had been passed since confinement, then 60 hours. A catheter was introduced and a large quantity of extremely offensive urine drawn off. The abdomen was excessively tender, the room was charged with an exceedingly offensive odor, the pulse was 146, the temperature $104\frac{1}{2}°$ F., the respirations 56, and there was rupture of the perineum, from the vagina completely into the rectum, laceration of the cervix, and septicemia. Prognosis was exceedingly unfavorable. Antiseptic injections were commenced at once, forty grains of quinine, combined with bromide of potash, were administered daily, the bladder was kept empty by means of the catheter, opiates just sufficient to relieve the pain and produce sleep were given, all the nutrition possible in the way of milk was exhibited, and more or less of stimulants were employed. Dr. Barker continued his visits for four days, and seven or eight days subsequently learned that the patient was rapidly getting well. Why it was that recovery took place seemed mysterious.

Dr. Chamberlain remarked that he had frequently had occasion to note the absence of pain in septic peritonitis, when compared with traumatic peritonitis, or even with cellulitis not septic.

He had also noticed, at certain times, that all the women confined at Charity Hospital had an elevation of temperature soon after labor to 103° or 104° F., but nearly all recovered without the farther development of pronounced symptoms. During two terms of service, when this symptom had been developed among the puerperal women, he had put them all upon the use of sulpho-carbolate of soda, and had come to regard it as an agent that exerted a beneficial influence in checking what, perhaps, might be called a septicemic tendency. The remedy possessed no power to abort well-established septicemia.

Dr. Chamberlain also spoke of this remedy as a valuable adjuvant in the treatment of diphtheria. Mawson's preparation was the most reliable he had found, and he usually administered it in glycerine, combined with tincture of orange peel and diluted with water to suit the case.

Dr. Janvrin related the following

CASE OF OPIUM-POISONING IN AN INFANT.

On Friday morning, at about five o'clock, he was called to see a child, five weeks old, to which the night previous gtt. x. of paregoric, it was supposed, had been administered. It proved, however, that the father had made a mistake, and had given gtt. x. of Squibb's liq. opii comp. The mistake was not discovered until about four o'clock in the morning, when the child was found unconscious. Dr. Janvrin took with him a medium-sized Kidder's battery, and when he arrived, the child had ceased to breathe. The heart was yet beating in the faintest possible manner. The battery was immediately applied, the positive pole over the phrenic nerve and the negative pole over the diaphragm, and about one-third its power put into action. The power was gradually increased until, at the expiration of about one minute, the full strength of the battery was brought to bear. At the expiration of seven seconds, the child gasped; at the expiration of fifty seconds, another gasp was made, and in a few minutes breathing was established, although it was very superficial. After four or five minutes, the power of the battery employed was gradually diminished, $\frac{1}{300}$ of a grain of atropine was administered hypodermically, and brandy was given by the rectum. The pupils began to dilate at the end of about ten minutes after giving the atropine, and breathing went on very well, although rapid, sixty or seventy to the minute. The pulse was so rapid that it could not be counted. At 8.30 A.M. the child again suddenly ceased to breathe. The battery was again used and respiration established. Before eleven o'clock P.M., the child had five similar attacks, in which there was complete suspension of respiration, lasting from three to five minutes each time. The battery was used, and at eleven P.M. the respiration and pulse were exceedingly rapid, and in that condition the child went through the night.

On Saturday, at about noon, erysipelas of the face began to be developed, and extended from the face to the head quite rapidly.

There was no perceptible change either in the pulse or in the respiration until Monday, when the respiration increased to eighty, the temperature, which had not been above 102° F., ran up to 104½° F., the erysipelas continued to spread notwithstanding the use of two-grain doses of quinine, and the prognosis was exceedingly unfavorable.

On Monday evening, the child was placed in a cold pack. The pack was at first changed every half hour, subsequently every hour, the extremities were kept warm, and that treatment had been in operation almost continuously up to Tuesday (this) evening. Within two hours after commencing the use of the cold pack, the temperature was reduced to 102° F., soon after to 101° F., and it had been as low as 99° F. The erysipelas was disappearing, and the prognosis seemed to be favorable.

Stated Meeting, March 5, 1878.

DR. A. J. C. SKENE, *President, in the Chair.*

DR. W. T. LUSK presented a specimen of

IMPERFORATE URETHRA, DILATATION OF BLADDER AND URETERS WITH CONSECUTIVE HYDRONEPHROSIS IN A FETUS GIVING RISE TO DIFFICULT LABOR,

accompanied by the following history:

Ann C., single, primipara, æt. 24, a nervous, excitable woman, began to complain of labor pains Feb. 28th. On the following day, Dr. Lusk was asked to examine her, and found the os dilated to the size of a ten-cent piece, pains were sharp and exhausting, but of a non-expulsive character. March 2d, no advance in labor. Dr. Lusk was again requested to make an examination. Abdomen presented a globular shape on line of umbilicus, thence sloping suddenly toward pubes, suggesting transverse presentation. Patient had become so hysterical as to make the administration of chloroform necessary previous to making an examination. Dr. Lusk found cervix still of same size as the day previously, but perfectly dilatable; head presentation; the ease with which ballottement was produced particularly attracted his attention. The head, which was high up, seemed like a body floating in a fluid, and was affected by the slightest touch. Dr. L. accordingly invited Dr. Cohen, the house physician's attention to this point and to the dilatability of the cervix. While Dr. C. was engaged in examining the case the membranes ruptured. The discharge of amniotic fluid was extraordinarily profuse. Immediately after, the head descended, and Dr. Lusk left the case, never doubting that the birth would soon follow.

At 7.45 P.M., the head was delivered, occiput coming under pubes, further delivery being impeded. Dr. Cohen examined and found arms crossed on chest and engaged behind pubes: these being brought down, and traction having been gently made, the upper part of the *thorax* appeared in the vulva; after this, forced traction was of no avail, as the vulva and vagina were strongly contracted on fetus; head and face of fetus were by this time bluish and swollen. The house physician gently introduced his hand into vagina, along anterior plane of child, and found the impediment due to enlargement (fluctuating) of the abdomen of fetus. Traction again attempted, but being unwilling to apply further force, laceration of the perineum to the second degree having already been produced, he summoned Dr. Esterbrook, who, on his arrival (the woman in the mean time having been in a complete anesthesia, and not subjected to any manipulations), by a few well-directed forcible tractions, delivered the child, which was found to be still-born and ascitic. The abdomen of fetus, immediately after birth, measured 20 inches at umbilicus; weight not taken.

Autopsy made by Dr. Manuels, who reported.—Head deeply cyanosed, bones freely movable, extremities fairly developed. Body: abdomen largely distended, ovoid in shape, measuring just above umbilicus 16½ inches; thorax at base 13 inches. abdomen fluctuates, dull on percussion. On making an opening midway between umbilicus and pubes, a pale straw-colored fluid escapes; this soon ceased to flow, and another opening made between umbilicus and ensiform cartilage allowed clear fluid to escape. The abdominal fluid contained colloidal masses, which, according to Olshausen, are characteristic of fetal peritonitis. No perceptible odor to either of the fluids; ascitic and urinous fluids together measured 28 ℥.

Examination of mixed fluids.
Color—clear, pale straw-colored.
Odor—none perceptible.
Reaction—acid.
Specific gravity—1004°.
Albumen or albuminoids—none.
Mucin—none.
Sugar—none.
Sediment—a trace, heavy granular.

Microscopic examination shows a few small globules of carbonate of lime; little aggregations of these crystals are occasionally seen. Pale, disintegrating pavement epithelium, a few pale cells of bladder epithelium; none seen from pelvis or ureters; a few blood-corpuscles, normal and crenated; few rod-like bacteria.

On enlarging the upper opening, we discover a large sac filling the lower two-thirds of the abdomen; this sac was attached to ante-abdominal wall to a point a little above the umbilicus, and on closer examination proved to be a distended bladder, the muscular walls of which were moderately hypertrophied. Mucous membrane pale, a No. 8 bulbous bougie (Otis) passed into vesical orifice of urethra was arrested under the pubes. (Congenital occlusion of the urethra.)

Kidneys and Ureters: The latter dilated to fully ¼ inch in diameter and tortuous. The orifices of ureters open two inches above vesical orifice of the urethra and more widely separated than normal.

Lungs: right somewhat compressed, both show very little evidence of inflation. *Pericardium* is filled with clear, straw-colored fluid. *Heart* normal. *Head* not examined.

Kidneys and pelvis are dilated, pyramids not distinguishable, and only a thin rim of kidney structure remained; stomach normal in situation; small intestine about two feet in length; upper half contained greenish-black meconium; lower half contracted, pale; small intestine opened into cecum, the latter being situated underneath the pyloric extremity of the stomach. The appendix vermiformis is normal; large intestine is about one foot in length, somewhat convoluted in central portion of its course; its mesentery is attached over anterior border of spinal column. Rectum and anus normal.

Thorax: right pleural cavity filled with clear, straw-colored fluid; left containing ʒ i.

Dr. Skene remarked that it was claimed by some authors that one of the most common causes of fissure of the bladder and urethra was a failure in the union of the two halves of the embryo, while others maintained that it was caused by rupture of the embryonic bladder after union and complete formation had occurred. He was interested in learning whether or not the question had been settled, and also how the condition present in the specimen compared in etiology with fissure of the bladder.

Dr. Noeggerath remarked that the general opinion was that fissure of the bladder and the urethra was the result of imperfect development. The fissures were simply due to imperfect occlusion of the anterior wall of the abdomen.

Occlusion of the urethra was just the opposite condition. The back part of the wall of these organs was developed to too great an extent, and the result was that the parts passed each other in the shape of a fold, as sometimes occurred in the vagina and the uterus. The one was an imperfect condition, and the other was an exaggerated state of the early attempt to close the organs in the anterior part of the abdomen.

Dr. Thos. Addis Emmet reported a case of ovarian tumor, illustrating the difficulty sometimes met with in making a

DIFFERENTIAL DIAGNOSIS BETWEEN OVARIAN TUMOR AND FIBRO-CYST OF THE UTERUS. OVARIOTOMY DURING PERITONITIS AND SUPPURATION OF THE CYST FOLLOWING TAPPING; RECOVERY.

At first he was inclined to regard the tumor as ovarian.

It had been examined by another and eminent physician, and the opinion given that it was a fibrous tumor. He accordingly gave large doses of ergot, and peritonitis resulted.

Dr. Emmet remarked that he had seen *three* cases in which ergot, used in large doses under like circumstances, had produced peritonitis.

The woman was then advised to consult Dr. Peaslee, who pronounced the tumor ovarian, and the same day Dr. Thomas saw the case, and also called it ovarian. Fluid was then drawn from the tumor. The first drawn, gelatinized upon cooling. Fluid was again drawn, and submitted to microscopical examination.

Dr. Drysdale, of Philadelphia, found no ovarian corpuscles, neither did Dr. Peaslee.

Dr. Hunter thought he found the ovarian corpuscle, and Dr. Maxwell was of the same opinion.

The patient became very much run down, and on the 8th of December, 1877, it became necessary to resort to tapping.

Inflammation of the sac followed, and in consequence of rapid blood-poisoning, Dr. Emmet was obliged to operate for the removal of the tumor.

Before the operation was commenced, Dr. Peaslee changed his mind somewhat with reference to the nature of the tumor, and seemed to be about as much in favor of calling it a fibrous tumor as he had been at first of regarding it as an ovarian tumor.

Symptoms of blood-poisoning were intense when the operation was commenced. The patient had not for *five* days retained upon the stomach even a swallow of water.

The uterus rather increased in size, and the patient had flowed for two weeks before the operation.

The operation was performed under Lister's antiseptic plan, by the assistance of Dr. Robert F. Weir. Adhesions were very extensive; so great was the difficulty in reaching the tumor that dissection of the peritoneum from the muscular structure was commenced. The tumor was at last reached, and a basin and a half of fearfully fetid pus removed. The operation was completed in two hours.

There was acute peritonitis at the time it was performed, but it was a very noticeable fact that the natural color of the peritoneum was almost entirely restored by the time the operation was completed. The spray so controlled the hemorrhage that the wound could be immediately closed.

An interesting feature of the case was, that the patient when she came from under the influence of the ether, awoke as if from a natural sleep, and was at once able to take food; all symptoms of blood-poisoning had disappeared.

All changes of dressings were made under carbolic spray. On the 3d day, the pulse rose to 130 or 140; the dressings were removed, about two ounces of fluid were withdrawn, a drainage tube was introduced, the pulse went down to 95, and the temperature fell to the normal standard. Beyond this there were no unfavorable symptoms. At the end of the 8th day the wound was closed, and the patient gradually convalesced.

Before the operation was performed, every symptom pointed to its being a case of fibro-cyst rather than an ovarian tumor, thus showing that we cannot depend upon the ovarian corpuscle as an unfailing element in diagnosis.

Dr. Emmet also related

A CASE OF CHRONIC CYSTITIS, WITH UNSUSPECTED BRIGHT'S DISEASE. DEATH AFTER ETHERIZATION FOR CLOSURE OF AN OLD FISTULOUS TRACT.

Dilatation of the urethra had been made, and incontinence of urine had succeeded the operation. Not knowing that Bright's disease was present, ether was administered for the purpose of closing a fistulous opening, and the patient died suddenly.

It was like several cases already reported by Dr. Emmet, in which death had taken place after the administration of ether under like circumstances.

The woman was apparently in perfect health at the time the operation was commenced, other than the incontinence of urine from which she had suffered since dilatation of the urethra, some four years previously. As soon as ether was administered, secretion from the kidneys entirely ceased, and the patient died on the third day from uremic poisoning. The post-mortem showed extensive pyelitis and chronic interstitial nephritis.

Dr. Skene raised a question as to what means could be employed for making a diagnosis of renal disease in connection with chronic cystitis.

The ordinary constitutional symptoms of renal disease could not be relied upon in such cases, and if light could be thrown upon the subject, it would be of the greatest possible value. The examination of the urine in such cases was also exceedingly unsatisfactory with reference to the renal disease.

Dr. J. W. S. Gouley remarked that he had found it almost impossible to make a diagnosis of renal disease in such cases.

Dr. Roosa thought that the ophthalmoscope would be a valuable assistant under such circumstances, as there were probably not many cases of advanced Bright's disease without changes in the retinal circulation.

Dr. Skene asked whether or not casts were frequently found in the urine of such patients.

Dr. Gouley remarked that there were many cases of this class in which no casts were present in the urine. In acute pyelitis or in acute interstitial nephritis, there was no difficulty in making a diagnosis, but in this class of cases it was next to impossible to make out the nature or the presence of renal trouble.

THE DANGERS OF DILATATION OF THE URETHRA.

Dr. Emmet drew attention to the subject of dilatation of the urethra nearly ten years ago, when he published his book on vesico-vaginal fistula. He had seen some half-dozen cases of incontinence of urine following dilatation of the urethra for stone in the bladder. He had had the accident occur to himself in some cases, and again in others no inconvenience had followed the operation. He had lately seen a hospital case in which nothing could be done to relieve the incontinence.

In the case just reported, it was shown by post-mortem that, in different directions, the mucous membrane had been split through, so as to permit a hernia of the muscular tissue beneath, and in that condition cicatrization had taken place. An incurable incontinence, therefore, was an unavoidable result under such circumstances. It was a question, therefore, whether we had a right to subject the patient to such risk, even if no more than one in one hundred cases has permanent incontinence of urine after dilatation of the urethra. He was quite sure, however, that the accident occurred much more frequently than that.

It was a question whether any information was to be gained by dilatation of the urethra which could not be obtained by examining through the vagina and the abdominal walls.

Dr. Emmet was certain that, within the past year, he had seen four or five cases in which the women had been maimed, as it were, by dilatation of the urethra, and he knew of no relief for the incontinence which had followed. Doubtless he had seen an undue proportion of such cases, and he was, therefore, desirous of having some expression of the Society regarding the operation.

Dr. Hanks thought that what followed the operation of dilatation of the urethra might depend very much upon the condition of the urethra at the time the dilatation was made. In cases of chronic cystitis, dilatation to any very great extent could not be effected without producing rupture of the mucous membrane of the urethra. But in cases in which the urethra and bladder were in a healthy condition, dilatation could be made without causing such rupture.

Dr. Emmet remarked that, in all his cases, except the one just reported, the urethra and bladder were healthy, and the dilatation was performed for purposes of diagnosis, and yet incontinence had followed.

Dr. Noeggerath indorsed the view advanced by Dr. Hanks, and believed that it made a great difference whether the healthy urethra was dilated simply for purposes of diagnosis, or whether the dilatation was done in connection with advanced disease of the bladder. There was no doubt but that, even though the disease of the urethra was not striking, the mucous membrane as well as the muscular tissue was affected, and dilatation was then especially liable to be attended with laceration. But in case the bladder and the urethra were healthy, if the dilatation was not done too rapidly, he was convinced that it would not do harm.

The question of incontinence of urine after dilatation of the urethra was not so simple as, at first, it appeared to be. It was a question whether permanent rupture of the urethra, of itself, had any effect in producing incontinence of urine.

Dr. Noeggerath referred to one case in which the entire urethra was split and kept open for the purpose of performing a certain operation for stone, and the urethra did not heal up for two or three weeks, and yet no incontinence of urine was present.

Furthermore, there were cases on record in which the entire anterior part of the urethra had been destroyed by ulceration, and yet continence of urine had been perfect. In order that incontinence should follow, there must be lesion of the sphincter of the bladder.

He did not think that the question of incontinence of urine following dilatation of a healthy urethra for purpose of exploring the bladder was yet settled.

With regard to the personal experience of Dr. Emmet, it was doubtless greater than that of any gentleman present, and if the general result was such as indicated by his cases, the operation should be abandoned; but it must be remembered that it was chiefly such cases that came under Dr. Emmet's observation.

He did not wish, therefore, that the conclusions reached by Dr. Emmet should go entirely uncontradicted upon the records of the Society.

Dr. Noeggerath had performed the operation seventy-five times. In some of these cases incontinence had followed and lasted from one to four weeks, but in only *two* cases had it lasted for a longer time.

Dr. Emmet remarked that Dr. Noeggerath was perfectly correct in his statement, that the entire urethra could be split open to the neck of the bladder, and yet the woman have continence of urine.

Incontinence did not follow unless the neck of the bladder was involved. Dr. Noeggerath had used the term "sphincter at the neck of the bladder," but Dr. Emmet was not aware that there were any muscular fibres there at all. He had supposed the retentive power came only from a falling together of the superabundant mucous membrane at that point. He, therefore, inquired whether there was a sphincter at the neck of the bladder.

Dr. Noeggerath replied that he did not speak of a sphincter in an anatomical sense, but that there was an arrangement of muscles at that point which made it a sphincter in a physiological sense.

He further remarked that, in certain cases, he had noticed the existence of a sharp ring-like arrangement at the neck of the bladder which had all the external appearance of a sphincter. It was situated just at the edge of the bladder, and he had concluded that it was not well in those cases, especially, to carry dilatation too far, as occasional rupture at that point took place.

Dr. Gouley asked what percentage of cases, in which dilatation of the urethra was performed, suffered from incontinence of urine?

Dr. Emmet replied that, in eleven cases which he had performed the operation, two suffered from incontinence.

Dr. Noeggerath remarked that out of his seventy-five operations, incontinence followed in but *two* cases.

Dr. Gouley related briefly the history of four cases in which dilatation of the urethra was made, and in none had incontinence of urine followed.

Dr. Emmet remarked that, if *one* case in one hundred suffered from permanent incontinence after dilatation of the urethra, it became a question whether the operation was justifiable.

Dr. Noeggerath remarked that, when a new operation was brought forward, it must be tried for some time by the profession in order that it might be determined under what circumstances it could be performed with safety. The operation of dilatation of the urethra, with the view of examining the bladder, the uterus and its appendages, was too new to permit of a final decision regarding its feasibility, and the accident which might follow its performance. If he had already had two cases of incontinence of urine follow seventy-five operations for dilating the urethra, he might perform the operation in the next seventy-five cases without its being attended by any accident whatever.

Dr. Noeggerath was willing to concede that, if in one case in one hundred permanent incontinence of urine followed dilatation of the urethra, it was sufficient to warrant a discontinuance of the operation; but he did not think that it had yet been sufficiently tried to enable us to determine whether or not it should be given up entirely.

Dr. Skene asked for an explanation of the incontinence of urine, if there was no sphincter of the bladder.

Dr. Emmet replied that the cicatricial line after rupture of the mucous membrane interfered with the natural puckerings or foldings of the tissues.

Dr. Skene asked for what was dilatation of the urethra performed, except as a means of diagnosis, or for the removal of a stone from the bladder.

Dr. Emmet replied that it had been adopted as a method of curing cystitis.

Dr. Skene asked what benefit was derived for the cystitis by the operation.

Dr. Emmet replied that he knew of no benefit whatever to be derived. It was possible that there were fissures at the neck of the bladder as at the sphincter ani, and probably, if the dilatation could be regulated, they might be removed, but the trouble was, the dilatation could not be regulated.

Dr. Skene remarked that he had no difficulty whatever in making diagnosis in cases of fissure at the neck of the bladder, by means of the new endoscope which he had lately exhibited to the Society.

The fissure could be detected as easily as if situated upon the cervix uteri, whereas, with the endoscopes in common use, it was impossible to recognize the existence of fissure.

Dr. Gouley remarked, with reference to the extent to which the neck of the bladder could be dilated without producing incontinence, that Dolbeau had found, when he exceeded a dilatation of $\frac{13}{16}$ of an inch, he made deep fissures.

Would it not be proper, therefore, to put some limit to the extent to which the female urethra should be dilated? Might we not, by observing some fixed limit, avoid the production of incontinence of urine?

Dr. Noeggerath remarked that the female urethra could be dilated to $\frac{3}{4}$ of one inch in diameter, and no difficulty whatever follow.

The limit of dilatability of the female urethra was different in every single instance. It was probable that, if the patient had the kind of sphincter mentioned which was so easily injured, dilatation of less than $\frac{13}{16}$ of an inch would be apt to do harm. He did not think that any limit of dilatation applicable to the male urethra was applicable to the urethra of the female.

Dr. Munde referred to two cases in which there was marked vesical tenesmus, without recognizable organic disease. The patients were cured by dilatation of the urethra. No incontinence followed.

Stated Meeting, March 19, 1878.

Dr. A. J. C. Skene, *President, in the Chair.*

Dr. A. Jacobi presented a case of

PSEUDO-HYPERTROPHY IN A GIRL.

The patient was a girl, æt. 8 years, who had always been healthy. The mother first noticed the swelling about four years ago, when it involved the right lower extremity, with the exception of the foot. It remained stationary until about three months ago, when it began to increase very rapidly.

The child seemed somewhat fatigued at evening, especially in the right leg. Her bowels were regular and her appetite good.

When presented, there was considerable increase in the size of the right lower extremity, with the exception of the foot. The swelling extended upward to the gluteal region, but, so far as Dr. Jacobi was able to determine, did not involve the gluteal muscles. The thigh upon the left side was increased in size. The superficial sensibility was not at all changed, and there was only slight interference with motility. It was thought that the slight interference with motility was due to the amount of fat which had been deposited between the skin and muscular tissue. The abdominal muscles were apparently heavier than normal.

Dr. Jacobi remarked that he presented the case, because examples of the disease were very rare.

Up to 1875 only 80 cases had been collected. Since that time, some 20 or 25 more had been reported in the journals, making the entire number up to date in the neighborhood of 100.

The case was interesting with regard to sex. A large majority of cases—that is, about 80 per cent of all the cases of pseudo-hypertrophy—occurred in male children.

In a large majority of cases, the disease appeared at the age at which this child was first affected.

Frequently the disease was for some time limited to one of the lower extremities: and frequently it became bilateral, after it had lasted for a long time.

It was occasionally seen in the upper extremities; and there was one case upon record in which the entire body, with the exception of the pectorals and one other set of muscles, was affected.

Cases in which the disease involved the entire body or a large portion of the body were very rare. As a rule, however, more of the body was affected than was involved in progressive muscular atrophy of the adult, which was a kindred disease.

It was a disease of the muscular tissue. As a rule, it began in the cellular tissue surrounding and lining the muscular fibrillæ. Early in the disease, there was interstitial inflammation with a good deal of granular deposit, and it was only after some time that the muscular fibrillæ themselves became swollen, and contained a great deal of granular and fatty deposit.

In all cases, the texture of the muscles at the beginning of the disease was unaffected.

Not infrequently, the same changes which existed in the muscles were found in the nerves.

Occasionally such a neuritis ascended, and it was possible that it might travel upward, affect the anterior horns in the spinal cord, and subsequently the disease might be developed in the other limb.

As a rule, however, the disease must be regarded as one having a central origin, and dependent upon changes occurring in some part of the anterior horns.

For that reason, it was apt, at some time or other, to become bilateral, in the same manner as progressive atrophy in the adult.

Prognosis, with reference to length of life, was very favorable. Only a few cases had died, and in those death had occurred from disease of the respiratory organs.

It must be recollected, however, that diseases of the respiratory organs were most common at the age in which this disease occurred.

There was no case, with perhaps a single exception, in which death could be attributed directly to the disease.

With reference to recovery, prognosis was unfavorable. It was possible that unfavorable results, with reference to recovery, might be due to a reluctance on the part of parents to have done whatever seemed necessary in such cases. Treatment should extend over a long period of time, and, probably, but few parents would be found who would permit the child to go where regular treatment could be obtained.

Recovery in cases of progressive atrophy in the adult had taken place under constant, prolonged, and appropriate treatment, and it was possible that the same result might be realized in cases of pseudo-hypertrophy.

On the other hand, when the disease began as a myelitis of the anterior horns, treatment in all probabilities would be of no avail.

Treatment.—The case presented was tolerably recent. The pathology consisted in a recent inflammation of the connective tissue surrounding and lining the muscular fibrillæ and also inflammation with granular and fatty degeneration of the fibrillæ themselves. The indication, then, was to employ such means as would arrest the deposit of fat, and whatever would act antiphlogistically, so to speak, upon the muscular fibres.

Dr. Jacobi believed that, at an early period, the iodides would probably be beneficial. He could imagine that, in the beginning, a protracted mercurial treatment, although it had not been employed, would probably be of service. Very probably the faradic and the galvanic current, only occasionally applied and with short sittings, would do good.

There were several cases on record in which, as the disease progressed, the circulation, probably venous, was found to be increased.

It was very probable, therefore, that whatever induced contraction of the blood-vessels would be indicated. A trial of ergot, therefore, might be made in such cases.

Friction, kneading the muscles, and *massage* were indicated.

One of the principal reasons why the disease was not arrested was because the muscles became paretic if not paralyzed.

Dr. Jacobi believed that if the word "diathetic" was used at all, there was a diathetic condition in these cases. There were several cases on record which occurred in the same family. There was one instance in which *three* children in the same family had pseudo-hypertrophy, and a fourth had progressive atrophy; thus showing that, if the two diseases were not one and the same, they had a common cause.

In several instances, nervous diseases, such as idiocy, lunacy, epilepsy, etc., had existed in families in which pseudo-hypertrophy had been found, thus proving that, very probably, the disease was of central origin. No cases had been seen in which the affection could be attributed to central disease, since the one reported by Duchenne. Sensibility was not affected, hence the posterior roots of the spinal cord could not be involved; it must, therefore, be the motor portion, the trophic portion, the special ganglia in the anterior horns which were affected.

Experimental physiology had not yet proved that trophic nerves have their centres in the ganglia of the anterior horns.

Experimental physiology had not even concluded positively that there was any such thing as trophic nerves which differ from *vaso-motor* nerves. But the results of pathological experience and experimentation, such as that instituted by Charcot, had shown that the disease was located in the anterior horns of the spinal cord.

[At the meeting, May 8th, Dr. Jacobi reported that under the influence of the mercurial treatment the circumference of the thigh had diminished between two and three centimetres.]

EXTRAORDINARY PIGMENTATION OF THE SKIN IN PREGNANCY.

Dr. J. W. McLane reported a case in which extraordinary pigmentation of the skin occurred during pregnancy. There was a general deposit of pigment over the entire body. The woman was at about the eighth month of her third pregnancy, and was so deformed by the pigmentation that she was obliged to remain in the house. The pigmentation exhibited itself in patches varying in size from one inch to six inches square or more. The largest patches were upon the neck, the back, and the thighs. In those situations the skin was very near the color of that of a negress, and made a very striking comparison with the light skin of the blonde.

Dr. McLane asked two questions:—

First, was such pigmentation common in pregnancy?

Second, was there any treatment which would be of service in such physiological pigmentation?

During the second pregnancy of the same lady, her skin became slightly pigmented in spots, and the discoloration remained for some months after confinement. It finally disappeared entirely.

The was no unusual pigmentation about the nipple or along the meridian line of the abdomen.

Dr. Jacobi regarded the case as an unusual one. He also regarded pigmentation of the skin in such cases as a neurosis produced by pregnancy. It would be interesting to know to what extent the patient was subject to other neurotic symptoms. He believed that such *negrism* held the same relation to the nervous system as did local *albinism.*

Either general neuroses or *vaso-motor* neuroses under other circumstances were not very uncommon; perhaps not to that extent, however, which was visible in the case related. He desired to learn something more of the case and suggested the following questions:—

What kind of skin has she? Does she perspire unusually freely? Has she *vaso-motor* disturbances of any kind? Are there any hysterical symptoms? Is there any affection of the spinal cord or its meninges? Are there any local points which are painful? Are there any neuromata anywhere in the body? Can she be very easily affected by the galvanic current, one pole applied, perhaps, to the spinal column and the other over the ganglia in the neck?

That something could be found which would prove the case to be of a neurotic character there was probably no doubt.

Dr. McLane remarked that he had supposed the pigmentation was the result of *anemia.* He thought it was generally considered by writers on skin diseases to be due to that condition. The patient was unusually anemic for a woman in pregnancy.

He was not aware that she suffered from any of the disorders to which Dr. Jacobi had alluded. Such pigmentation was not confined to pregnancy, but was seen under other circumstances, and he was not aware that the woman was suffering from anything which led him to believe that the pigmentation was a neurosis.

Dr. Jacobi said it was true that pigmentation of the skin occurred in other conditions than pregnancy, but, in those cases, it was found to be almost always neurotic in character. If due to simple anemia, why was the discoloration of the skin local and not general?

Dr. Noeggerath remarked that discoloration of the skin in pregnant women was very common, but that he had never seen a case in which pigmentation had gone to the extent described by Dr. McLane. He was of the opinion that the cause of such discoloration was an alteration in the normal condition of the blood. Similar discolorations were seen in cases of pernicious anemia and in bronze skin. It was probable that the proximate cause was some local alteration in the nutrition of the tissues which was doubtless produced by some disturbance of the *vaso-motor* system. He had no doubt, however, but that the chief cause of such discoloration was anemia.

Discoloration of the skin in the pregnant woman opened up a question which had been very prominently laid before the profession by Dr. Barnes, of London, in a paper read during the first meeting of the American Gynecological Society.

Dr. Noeggerath's impression was, that we were not yet sufficiently advanced in our knowledge to be able to explain the phenomenon. We did not yet know why in pernicious anemia, or in bronze skin, or during pregnancy such deposit of pigment took place.

A number of experiments and farther observation were necessary to guide us in the explanation of these facts.

Dr. Jacobi remarked that the comparisons instituted by Dr. Noeggerath between such cases as that related by Dr. McLane and discoloration occurring in cases of bronze skin and pernicious anemia would hardly hold good. For, bronze skin was considered as a neurosis and not the result of any condition of the skin, and therefore it would seem that the very illustration would be an inducement for farther study of Dr. McLane's case.

The fact that Charcot, the greatest of neurologists, regarded such discolorations as neuroses, was an inducement to investigate every case thoroughly. So far as pernicious anemia was concerned, but little was known of it except its symptomatology.

SUDDEN DISAPPEARANCE OF ALBUMINURIA AFTER THE INDUCTION OF PREMATURE LABOR.

Dr. McLane related a case in which there was a remarkably rapid disappearance of albumen from the urine of a patient upon whom premature labor had been induced. The patient was a primipara, and there seemed to be no other cause for the albuminuria except the pressure of the gravid uterus upon the emulgent renal veins. She was 24 years of age, had always enjoyed excellent health, and had reached seven months and three weeks in her pregnancy. The urine had, up to within two weeks, been examined every ten days since the fifth month, and had always been found to be entirely free from albumen. During that time, microscopical examination was not made. About two weeks ago, the urine was examined, and found to contain about 75 per cent of albumen. The patient was at once visited, when it was found that her face was congested; there was considerable edema of the face and the lower eyelids, and there was considerable general anasarca. At that time she was passing quite a large quantity of water, her bowels were regular, she was not aware that she had taken cold, there was only slight headache, and no nausea or pain anywhere about the body.

A purge was ordered, consisting of a bottle of citrate of magnesia, and the result was thirteen movements from the bowels. The following day, there was slight decrease in the edema about the face; the dropsy of the lower extremities remained unchanged. The quantity of urine passed was very much decreased during the twelve hours in which the purgative was acting, and it was found to be more albuminous than before the purgative was administered. On the following evening, the urine solidified when heated. The next morning, infusion of digitalis in dessert-spoonful doses, combined with citrate of potash, was administered, and dry cups applied over the loins. The quantity of urine increased after the cupping, but the proportion of albumen was maintained. At one microscopical examination, a few hyaline casts were found.

Although there was no nervous disturbance, except a slight headache in the morning, which soon passed away, Dr. McLane suggested that the proper course to pursue was to bring on premature labor.

Dr. Fordyce Barker saw the patient in consultation. He regarded the attack as one due to taking cold, and advised that the digitalis should be continued in larger doses, ℥ ss. t. i. d. He was of the opinion that, after twenty-four or thirty-six hours, the albumen would begin to disappear from the urine, and that, if then the patient was put upon the use of the tincture of the chloride of iron, it would disappear entirely, and she would go on favorably.

The suggestions made by Dr. Barker were carried out, and the purgative also continued. Six or eight loose discharges from the bowels daily had been kept up during the attack, and it was believed by Dr. McLane that to that fact the almost entire absence of headache, nausea, and disturbance of vision was due.

No improvement making itself manifest, Dr. McLane decided to induce premature labor. He accordingly introduced a flexible bougie into the uterus at about nine o'clock in the evening, and permitted it remain through the night. The following morning, he was able to introduce a finger into the uterus. Another bougie was introduced, and permitted to remain. About four hours after, the patient having had some pain, a small Barnes' dilator was introduced and allowed to remain. At eight o'clock in the evening, the largest size of Barnes' dilators was introduced, and remained until 10.30 P.M., when it was found that the patient was having quite severe pains. The dilator was removed, the membranes presented, the pains were of an expulsive character, the membranes were ruptured, and the child was born at ten minutes to one o'clock; the child weighed four and a half pounds, and cried well.

For examination, urine was drawn from the bladder, and on the sixth day from that on which the first bougie was introduced, five days from the time at which the child was born, it was found to be absolutely free from albumen.

Dr. McLane remarked that he had never seen a case in which the albumen had disappeared from the urine so rapidly under similar circumstances.

Farthermore, he believed that it was unwise to wait in such cases for the development of nervous symptoms before operating.

As a matter of course, one hesitated with reference to interfering with a woman's pregnancy; but it often happened that, while waiting for the action of palliative measures, convulsions have been developed.

When there was a tendency to convulsions, as there was in albuminuria, there were many exciting causes which might suddenly bring on convulsions.

After convulsions had occurred, the operator was obliged to proceed more rapidly in the induction of labor, and was unable to make it so nearly a natural process as he could when more time was at his command.

Dr. McLane asked the following questions :—

First, was it usual for albumen to disappear from the urine within one week after the expulsion of the child ?

Second, how far was it wise for the physician to wait, after he discovered the fact that the patient's urine contained ninety per cent of albumen, whatever the cause of it might be, before inducing premature labor ?

Dr. Gillette doubted the propriety of producing premature labor simply because albumen was found in the urine. He had examined the urine in one hundred cases of pregnancy, with the view of ascertaining in what proportion albumen was present, and found that it existed in varying quantities in thirty per cent of the cases, and yet in not one of those cases did eclampsia occur. On the contrary, they were relieved by diuretics.

The history of a case was then related which occurred in the practice of Dr. Hathaway. A primipara; no albumen in the urine; a convulsion occurred; albumen appeared in the urine in large quantity. The question arose, should recourse be had to temporizing treatment or should premature labor be induced ? Dr. Gillette advised temporizing. There was no grave symptom present except a headache and the convulsion, and they were relieved by the use of diaphoretics and diuretics. After a few days, a second convulsion occurred, and again the question arose regarding the propriety of producing premature labor. As she had had one convulsion and been relieved by temporizing, the same plan of treatment was again followed. The convulsion passed away, the intellect became clear, and by the use of diuretics and diaphoretics her condition improved. A third convulsion occurred soon after, and then it was thought proper to produce premature labor. The introductory steps had been taken when Dr. Gillette arrived, but he advised that the operation should be postponed. The woman was conducted over her last weeks of utero-gestation, and, without eclampsia, safely delivered at full term. This was but a single case, yet it could be supplemented by many others in which equally good results had been obtained by temporizing measures. He did not think it safe practice, as a rule, to induce premature labor upon the development of such symptoms as were present in the case related by Dr. McLane. That he saved the life of the child was true, but it was very diminutive in size, and that he saved it was probably merely accidental. The chances of life for the child would have been enhanced had it been carried to full term.

Stated Meeting, April 2, 1878.

DR. A. J. C. SKENE, *President, in the Chair.*

CASE OF LOCALIZED ATROPHY IN A GIRL.

DR. A. JACOBI presented a case of trophic disorder.

At the last meeting of the society, he had presented a case of trophic disorder in which there was *pseudo-hypertrophy*, but in the present case there was *localized atrophy.* The girl was *nine* years of age. She was well up to the age of three years, when she was suddenly attacked with what were called "internal convulsions;" she was unconscious, shook her head from one o'clock until ten o'clock in the morning of the same day. A doctor was called, and on the following evening the diagnosis of "brain fever" was made. She remained in that condition of unconsciousness attended by convulsions until the second night; the convulsions occurred during both sleeping and waking hours, and there was considerable vomiting, but within two weeks she had practically recovered. She remained well for about *two* years with the exception of a great deal of headache, which was chiefly located upon the upper portion of the forehead; no vomiting. At the end of that time, and while comparatively healthy, she again was seized with convulsions which extended over the entire body. The convulsions lasted two or three minutes, and recurred sometimes every day, and again only at intervals of four or five months. A week before Dr. Jacobi saw the child, she had two convulsions in one forenoon, but previous to that time she had not had a convulsion for four weeks. She was not sleepy after having a convulsive attack, but looked as though she was intoxicated. She had never bitten her tongue, nor frothed at the mouth. She had never attended school, nor had she been taught anything at home, yet she exhibited an average intelligence. She was somewhat morose and peevish. Two months prior to the first attack she had a fall, and struck upon the front part of the head. Four or five weeks before the occurrence of the first attack, a red mark appeared over the right eye. After the first attack, said to be brain fever, the red mark turned brown. The red mark was found upon the same situation now occupied by a depression. Within two or thre weeks after the first attack, the brown mark was fully developed and had remained. The depression was present when the second series of convulsions exhibited themselves.

When five years old, the hair disappeared from the upper part of the forehead.

Since that time the skin, the muscle, and the subcutaneous tissue had become atrophied. There could be seen a marked depression, a little to the right of the median line, and extending to the neighborhood of the vertex, from that region the hair had disappeared and the skin was scarcely movable. The skin was very thin and had a brownish discoloration. A number of blood-vessels were visible, but they were visible simply because there was no tissue in which they could be imbedded.

Besides the localized atrophy upon the skull, there was a localized atrophy upon the upper lid of the right eye, and also a certain amount of atrophy of the entire right side of the face. There was also a peculiar mark upon the right side of the nose, scarcely extending to the median line.

There was a mitral regurgitant murmur. The question arose, what was the cause of the localized atrophy?

It might, perhaps, be thought that some relation existed between the atrophy and the mitral regurgitant murmur. When, however, the history of the case was studied, it was found that it contained the following points. There was a fall; three or four weeks subsequently a red mark made its appearance just over the right eye; about four weeks after the appearance of the red mark a congestive condition was developed which terminated in what was called brain fever; during the attack she had convulsions; the attack lasted about two weeks; apparent recovery took place, and soon after the red mark became brownish in color.

Two years afterwards, another series of convulsions occurred. In the mean time the brown color continued, and a certain amount of atrophy appeared and increased.

It would seem, therefore, that the trouble had its origin in a local injury. It was very probable that a hemorrhage was produced by the fall. That the hemorrhage should not develop immediate symptoms was a very common occurrence. There was probably a slight hemorrhage, resulting, not in depression, not in an immediate encephalitis, but in a gradual irritation which had terminated in nutritive disorder affecting the first and second branches of the trigeminus nerve.

It also seemed that there had been, besides this, symptoms of general cerebral irritation, probably dependent upon a local encephalitis.

Since that time the disease had made gradual progress until the peculiar condition seen had been developed—namely, a very thin skin, absence of subcutaneous tissue, almost complete absence of muscle, and a moderate amount of atrophy of the bone. The patient had been taken to Bellevue Hospital, where she could be subjected to regular treatment. Regular treatment had been continued five or six weeks, and had consisted in the use of the galvanic current and the hypodermic administration of Fowler's solution. The galvanic current had been applied once a day, each sitting continuing only six or eight minutes.

Dr. Jacobi remarked that it was with a good deal of confidence that he recommended the use of arsenic in the treatment of serious disorders of general nutrition. For example, he had seen good results follow its use in cases of tremor preceding paralysis agitans. One reason why better results had not been obtained by the use of this remedy was because of the erroneous mode of its administration. Not much effect was produced when the remedy was given by the mouth, but its beneficial influence was best realized only when it was used subcutaneously.

The girl had received subcutaneous injections of Fowler's solution twice a day for five or six weeks. The quantity given at first was four drops at each dose and it had been increased to eight drops.

When the treatment was commenced, it was impossible to produce any wrinkling of the skin covering the mark, but then (at the end of five or six weeks of treatment) the girl was able to throw the integument into folds which could be readily seen.

The case was regarded as interesting, *first*, in comparison with the one presented at the last meeting of the society, and, *second*, as illustrating the effects produced by the subcutaneous use of arsenic.

Dr. Thomas referred to a very striking appearance which he had incidentally noticed in one of his patients. The lady was married, and the mother of one or two children. Some five or six years ago, she was thrown from a sleigh and her head came in contact with a stone wall. At that time she was perfectly healthy, and Dr. Thomas had no positive knowledge regarding the extent or character of the injury. On account of injury received at that time, she was kept in bed several weeks, and soon after it was noticed that one-half of her face had commenced to undergo atrophy. The muscles had wasted, the subcutaneous tissue had disappeared, and the skin seemed to be drawn tightly over the bones of one side of the face nearly to the median line. The atrophy had steadily progressed, and the appearance presented was peculiar and rather frightful. One side of the face retained its original beauty, while the other was thin and ghastly. The color of the skin upon the affected side had been changed, and was of a dark copper color. There was no change affecting the limbs.

Dr. Jacobi remarked that the improvement which had manifested itself in his case within six weeks had led him to believe that a perfect cure might be obtained; at least, it was sufficient to encourage a continuation of the treatment. The injections had been made at any convenient part of the body, and no unpleasant results, either local or general, had followed their use.

Dr. Garrigues read the following paper on

ASPHYXIA IN NEW-BORN CHILDREN CONSIDERED FROM A MEDICAL AND A LEGAL STAND-POINT.

Case.—(*Hydramnion, brow presentation, forceps delivery, large child, cord compressed, deep asphyxia, inspiration two and a half hours after birth, death seven hours after birth.*)

"Mrs. B., 37 years old, has borne two children, eight and three years ago. No miscarriage. Both children were very large, but were born without instrumental help.

The last menstruation began on the 26th of April. Each menstrual period lasts generally six or seven days. The movements of the fetus were felt for the first time four months later. When I first saw her, about a month before her confinement, I diagnosed hydramnion on account of the uncommon prominence of the abdomen, the very marked fluctuation, and the quantity of water that could be felt between the fetus and the uterine wall. The vaginal examination did not reveal anything abnormal. During the latter half of her pregnancy, she suffered much from back-ache, which became so intense during the last sixteen days that she could barely move. When I was called, February 2d, 1878, true pains had already been present for twenty-four hours, and had been shooting down for two hours. I saw her at 5.30 A.M. The abdomen was uncommonly distended with water. The fetal heart beat 120, and the sounds were unusually clear, extending from the level of the umbilicus down all over the left side. As this seemed to be contrary to hydramnion, I examined very carefully, and was able to exclude twins by making out the configuration of the whole body, a diagnosis that was corroborated by the absence of any heart-sound in other parts of the abdomen. The umcommonly clear and extended sounds are easily accounted for by the uncommon size of the child. The os was about an inch from side to side, and scarcely a finger breadth wide in the antero-posterior direction. The cervical canal had the length of the third phalanx of the index.

The vertex was felt presenting. As the pains continued without forwarding the delivery, I gave her at three separate times fifteen grains of hydrate of chloral with an interval of twenty minutes, and later a fourth dose. She had some sleep, and the pains became better. At 9.30, the fetus had turned on its long axis, so that the back with the heart-sound was found in the right side. At 10.15, the os was as large as a silver dollar, when I ruptured the bag with a wire above the os, but in spite of the great quantity of liquor amnii present, only a couple of ounces escaped. The brow was then found presenting—both eyes, the nose, and the nostrils were felt above the horizontal branch of the left os pubis, the whole anterior fontanelle in front of the right ilio-sacral symphysis. I tried in vain to change the presentation into a vertex presentation, by pressure on the lower part of the forehead with two fingers. The heart-sounds became weaker, and the fetus made violent movements, like a seal in its little tank in a zoological garden. At the same time the mother suffered intensely. I therefore gave her chloroform and applied the forceps to the head, which was still at the superior strait. This was at noon. It was rather difficult to get the large head down. It bent and turned in the forceps, and emerged in the R. O. A. position.

The face was violet. It was very difficult to make the large shoulders follow. An assistant pressed the uterus powerfully down, whilst I pressed on the head from side to side, and finally hooked a finger into the posterior axilla. As soon as the head advanced somewhat, a loop of the umbilical cord appeared compressed between the neck and the right branch of the pubic arch. The head had a normal form, and the forceps had left no mark on it, except a small scratch on the back of the nose.

The child, a boy, was born in a state of profound asphyxia. Only a few slow and feeble beats of the heart showed that life was not extinguished. The child was entirely flaccid, the face violet, and the hands and feet blue. The cord was as thick as my thumb. I ligated it immediately and severed it. Compression of the womb was kept up by an assistant, and the placenta expelled by Credé's method. She lost about a pint of blood, and there appeared even some little arterial blood, probably due to laceration of the imperfectly dilated cervix.

Whilst others took care of the mother, I bestowed my whole attention on the child in order to restore it to life, and I had the opportunity to try most of the means recommended for this purpose. I slapped its buttocks, shook it, rubbed it, put it in a warm bath, and threw cold water over it alternately. Next I tried Sylvester's method, alternately lifting the arms along the sides of the head, and pressing the elbows against the hypochondria. Then I covered the face with a piece of linen, with a hole corresponding with the mouth, compressed the nose and the abdomen, and blew through the mouth, but found that the air scarcely entered the lungs. After that, I introduced a flexible catheter through the larynx. No fluid could be withdrawn, but the insufflation of the lungs was easily performed and kept up for two hours, whilst the child was constantly covered with hot cloths. The pulsations of the heart were brought up to 120, and were of normal strength, but, *two hours and a half* having elapsed without a single other sign of life, I was about to give up the case as hopeless, when it made the first respiratory gasp. Encouraged by this I went on with the insufflation, combining it with other stimulants, such as vapor of ammonia, tickling the interior of the nose with a feather, and the introduction of lumps of ice into the rectum, and the frequent application of ice and hot cloths alternately to the abdomen, this last measure, which had a very marked effect, being suggested to me by Dr. Stub. During the first hours the progress was very slow: at 2.30 P.M., the boy made the first inspiration, and at 4 o'clock he had only come to five double inspirations in the minute—that is to say, two inspirations followed one another immediately, and then there came a pause of about ten seconds before the next double inspiration occurred. At 5 o'clock, he made eight double inspirations. Now I ceased inflating the lungs, and during a whole hour he respired alone through the catheter. The short pause became longer, so that the respiration approached more the normal rhythm. In order to give him the benefit of warmed air, I held the end of the catheter in my open mouth. Several times the catheter was withdrawn in order to try if any fluid could be aspired, but it brought up only a little blood, probably due to a slight abrasion caused by the introduction of the instrument, or perhaps to the asphyxia itself, a state in which the lungs become filled with blood, and ruptures take place.

At 6 P.M., I withdrew the catheter and left it out, the respiration lost in frequency, being only six or seven double inspirations per minute, and had a stertorous sound. Twelve minutes later he opened both eyes. The conjunctiva covering the sclerotica was injected. Suddenly he ceased breathing altogether. I reintroduced the catheter and repeated insufflation, but now he could only be brought to make a few gasps, the pulsation of the heart grew weak, and at a quarter past seven, seven hours after birth, he died.

He weighed 11 pounds, his length was 21¼ inches, the circumference of the head 15 inches, and that of the shoulders 16½. The placenta measured 8 inches in length by 7[1] in transverse diameter. It was covered with blood-clots. The mother had very slight parametritis, and has been out walking every day this last fortnight.

Commentary.—My object in publishing this case is to impress upon the mind of all who may not know it, that *if only the heart beats, the life of the child may be saved even if spontaneous respiration does not appear for hours.* Many may be ignorant of the fact, as many text-books on obstetrics are apt to lead the practitioner into error on this point. The most recent German work, Spiegelberg's voluminous treatise,[1] gives only the advice not to despair of success *immediately* even in the worst cases. Stadfeldt,[2] professor at the university of Copenhagen, says that *half an hour or an hour* may elapse before respiration becomes regular. Playfair[3] speaks of the numerous authenticated instances of success after the lapse of *an hour or more.* Older writers, however, such as Nægele and Siebold, give more trustworthy information by stating that children have been revived, although they did not respire for two or three hours. I regret that I withdrew the catheter before the child respired quite normally and tried to cry, for from the great progress it had made, I feel confident that it would have been entirely restored to life, so as to be able to respire without any help, to cry and to move freely, even though perhaps it might have died after a few days, as is so often the case with children born in a state of asphyxia.

The hydramnion was probably due to the large size of the fetus. As often happens, it produced an unfavorable presentation and prolapse of the umbilical cord, which again was the cause of the asphyxia. The latter probably commenced when the fetus made such violent movements, and its heart-sounds became weaker. The forceps was first applied after this, and the entirely normal configuration of the head and absence of any kind of impressions on it show that the asphyxia could not be due to compression of this part.

Generally, we find the mouth, the throat, the larynx, and even the deeper parts of the air-passages more or less filled with aspired liquor amnii. The absence of fluid in this case can easily be explained by the brow presentation. The mouth was pressed against the wall of the uterus, and thus the fluid was prevented from entering, in spite of the efforts at respiration made by the child.

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[1] Spiegelberg, Lehrbuch der Geburtshülfe. 1878, p. 675.

[2] Stadfeldt, Det mekaniske Misforhold, 1872.

[3] Playfair, Midwifery, London edition, II., 256.

As for the comparative value of the different means employed to induce respiration, as on former occasions, I found the insufflation of air through an elastic catheter to give better results than anything else. Of the other means used, the irritation of the mucous membrane of the nose by a feather and by the vapor of ammonia, and that of the skin by momentary application of ice, had the most marked effect. An electric apparatus was not at hand. It might, perhaps, have been well to let some blood escape; but the opinions are much divided on that subject. Spiegelberg[1] goes so far as to condemn even the tying of the cord, because by it the child loses the blood retained in the placenta, which is its due.

Cases like the one I have submitted to you present a great *medico-legal interest*. I suppose that there is no member of this Society who will not agree with me that this child lived seven hours after its birth.

Where circulation, respiration, and motion are present, no man with the physiological knowledge of our age will deny the existence of life. But it has not always been so, and there are still countries in which this child would have been declared by law not to have lived. A double interest attaches to the question, what is to be regarded as a living child: on the one hand, the criminality of maltreating the child, on the other hand, its capability of inheriting and transmitting property to others depends on its being alive.

As it is likely that the opinion of the members of this Society would be more frequently asked, and have more weight than that of many others, it may perhaps not be altogether superfluous to make ourselves acquainted with the perplexities of a question that at first sight must seem so exceedingly simple to everybody acquainted with the laws of physiology. The laws of different ages and different countries are at variance as to the conditions required of a child in order to be able to inherit. The Roman law required that it should be perfectly alive, but it needed not to have made its voice heard.[2] In France, a capitulary of King Dagobert prescribed that it should live an hour and be able to see the four walls and the ceiling of the chamber. This law was altered by Louis IX., who ordered that it should cry. The present French law requires that the child shall be born *viable*, and the interpretation of the word *life* and *born alive* is complete and perfect respiration. According to Scotch law, the child must cry.[1] Thus in Scotland and in France our child would be declared not to have lived, and consequently not be able to inherit. The English law, influenced by the Roman law, is much more in accordance with science. 'Crying,' says Blackstone, 'is the strongest evidence of life, but it is not the only evidence.'[2] Coke says, 'Crying is but a proof that the child was born alive, and so is motion, stirring, and the like.' In the case of Fish, or Fisher *vs.* Palmer, in 1806, in which action was brought ten years after the birth of the child, it neither cried nor moved nor showed any symptoms of life ; but while in a warm bath, there twice appeared a twitching and tremulous motion of the lips. Denman thought it had not been alive, but two other physicians declared that it had been, and so found the jury.[3] Dunlope lays down the right principle that, where there is power of being affected by stimuli (other than galvanic or electric), this, in common sense, must be held to constitute vitality.

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[1] L. c., p. 672.

[2] Beck, Medical Jurisprudence, 12th ed. Philadelphia, 1863, I., p. 412.

In several cases of alleged infanticide, the English judges, in charging the jury, said that a child may be born alive and live for some time without breathing. In fact it would appear that breathing is regarded as only *one* proof of life ; and the law will therefore receive any other kind of evidence which may satisfactorily show that a child has lived.[4] A child that is born alive, or has come *entirely* into the world in a living state, may, by the English law, inherit and transmit property to its heirs, even although its death has immediately, and perhaps from morbid causes, necessarily followed its birth.[5] Although the mere warmth of the body would not be evidence of live birth, yet the slighest trace of *vital* action, in its common and true physiological acceptation—such as crying, breathing, pulsation, or motion—observed after entire birth and separation from the mother, would be deemed in English law a sufficient proof of the child having come into the world alive.[2] In the case of *Brock vs. Kelly*, the only sign of life was pulsation of the cord. The question of its having been alive or not came up twenty years later. At the time of its birth, it was declared alive by Dr. Freeman. Dr. Tyler Smith supported his opinion, considering that the fact that pulsation was observed in the umbilical cord after delivery was physiological proof that the child was not born dead. On the other hand, Drs. Lee and Ramsbotham gave their opinion that nothing less than breathing could establish the fact of live birth. The child, therefore, in their judgment, was not born alive. The chancellor decided that proof of breathing was not necessary, and held that there was sufficient legal evidence of life after birth in the pulsation observed by the accoucheur.[2]

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[1] Beck, l. c., p. 417. [2] Ib., p. 413. [3] Beck, l. c., p. 414.

[4] Taylor : Principles of Medical Jurisprudence, 2d edition. Philadelphia, 1873, II., p. 324.

[5] Taylor, II., p. 206.—It is to be noted, however, that in *prematurely born children*, the time elapsed since the conception of the child makes a difference. After six months of pregnancy, it is enough to prove that the child is born *alive*, but children born within the first six months after conception are presumed to be incapable of living, and therefore cannot take and transmit property by descent, unless they actually survive long enough to rebut that presumption. In such a case, therefore, the medical expert will not only have to answer the question if the child is born alive, but if it is born *viable*, that is to say, if it would be able to continue life. (See Chancellor Walworth in the case of Marcellis *v.* Thalhimer, Taige Chancery Reports, Vol. II., p. 35.)

That life may be prolonged even for a considerable time without breathing appears from a case observed by Bouchut. During twenty-three hours, feeble but distinct pulsations of the heart were heard at long intervals, but there was no motion of the ribs. Attempts to induce respiration failed. The post-mortem examination showed that the lungs had not received any air.[3] In a case which occurred at Turin, in 1818, the Cesarean operation was performed after the death of the mother. Motion of the child's head and feet were discovered during and after the operation; it opened its hands, which were closed; blood sprang out of the umbilical cord on being cut, and pulsations were felt in the cord, the carotid arteries, and the region of the heart; water being poured on its head in administering baptism, a motion of the lips and mouth was perceived, and an impression which produced an inspiration; the natural heat remained; after having lived about thirteen or fourteen minutes, some drops of blood came from its nose, it became pale, stretched its limbs, closed its eyes, and died. During the procedure pending before the senate of Turin, some distinguished members of the medical faculty proposed the question, whether the child had been alive, to the faculty of Strasburg, which declared that it was born alive.

In this country, no case of the kind has come before the courts, except one in this State, in 1830 (Marselis *vs.* Thalhimer), in which there was no proof at all of the child having been born alive. It was claimed that, upon establishing the fact of birth, the legal presumption was that the child was born alive. The court decided, of course, that the existence of life at birth was to be proved by the party seeking benefit from it.[4] But if

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[1] Taylor, II., p. 209. [2] Taylor, II., p. 210. [3] Taylor, l. c., p. 213.
[4] Beck, l. c., II., 422.

cases should come up, the decisions of the English courts would be considered the law.

However this may be, we are not jurists, but physicians, and it is for us only to testify if, in a given case, the child was born alive. The term *born* implies, that it has come *entirely* out of the body of its mother. If any part of it is still contained within the cavities of the mother, it is not considered by law as born. As to the term *alive*, we should stand on strictly scientific ground, and not repeat the errors committed by men who, in other respects, range among the best of our profession, such as Denman, Ramsbotham, Orfila, Dubois, Pelletan, Roux, etc. As long as active motion goes on, such as pulsations felt or heard in the heart, pulsation of the cord after the child has been entirely expelled from the body of its mother, the faintest respiratory gasp, or a movement of the lips or the eyelids or a limb, life is not extinct, and according to the wise laws which this country has inherited from England, any maltreatment of the child is a crime, and it has the right of inheriting and transmitting property.

As practitioners we should use every effort to make the child cry, this being, to the popular mind, the convincing proof of its being alive, which will perhaps save even the trouble and expense of a lawsuit, and which also gives hopes of keeping it alive, but as witnesses we must remember that life may be manifested in many other ways. In my case, the undertaker sent me a certificate for a still-born child, which, of course, I refused to sign. The cases alluded to above show that the question may come up ten or twenty years after the death of the child. It is, therefore, an imperative duty to be very exact in all our statements in such cases."

Dr. Thomas remarked that in his experience the faradic current had proved more serviceable than all the measures which were employed by Dr. Garrigues, with the exception of artificial respiration. According to Dr. Thomas' experience, the application of warmth to the body of the child, before respiration was established, was injurious rather than beneficial He had obtained the most favorable results from the use of electricity, when one electrode was placed just above the clavicle and the other over the diaphragm. Dr. Thomas was not willing to accept the explanation given by Dr. Garrigues with reference to the entrance of amniotic fluid into the mouth of the child; he thought the pressure upon the mouth was hardly sufficient to account for such an occurrence. Again, he thought it advisable to cut the cord at once and complete the delivery of the child, so that treatment for its resuscitation could be the more effectually applied.

With reference to the effect produced upon the child by cutting the cord, he suggested that the blood did not pass from the placenta to the child, unless the blood was passing from the child to the placenta and that the quantity passing in each direction was nearly equal. If, therefore, the placenta was in part or wholly detached, the child was likely to lose more blood by allowing it to remain connected to the placenta by the cord than by ligating and cutting the cord. Finally, Dr. Thomas had found Marshall Hall's method to answer better than any other that had been suggested.

Dr. Jacobi remarked that Sylvester's method was not by any means a new one, for he had read a description of it in a book written one hundred years ago. With reference to cutting the cord, he had never hesitated to do so at once, for, as long as it remained uncut, the child could not be properly treated. In cases of livid asphyxia, such as was present in Dr. Garrigues' case, there was usually a pretty large quantity of blood in the body of the child in an unsatisfactory condition of distribution. As a rule, in those cases the circulation between the mother and the child was very inefficient. That condition was not materially affected either by cutting the cord or by allowing it to remain uncut, but, by separating the child from the mother, it could be much more efficiently managed. During the last ten or twelve years, Dr. Jacobi had relied upon the electric current in these cases more than upon any other agent.

In his experience, all that was necessary in the use of the current was simply to produce a sudden impression. He aimed to produce a very sudden impression, even a local pain, and for that purpose the electrodes could be applied to any part of the body. For that reason he had employed the metallic electrodes instead of the sponges. There was one caution which was absolutely necessary, and that was that the application of the electricity should be very short and should be frequently repeated. If the application was continuous and kept up for some time, there was danger of producing paralysis.

With reference to the question of viability, Dr. Garrigues had, from his point of view, made an admirable statement of the case, but whether the courts would sustain him or not was a different question. There was no law in any country which admitted that a child was viable before it had reached 180 days of utero-gestation, and yet it was well known that a child less than that age would move, that the heart would beat, and there were cases upon record in which at that age the child had cried. Notwithstanding the movements of the child, the heart-beats, and the crying—the child under 180 days of age would not, according to law, be regarded as viable. Dr. Jacobi thought that the view held by Dr. Garrigues would not be sustained by the courts.

Dr. Garrigues remarked, with reference to the use of warmth, that he had in view the alternate use of heat and cold to the surface.

He certainly regarded it as proper to cut the cord as soon as possible, in order that the child could be most conveniently treated.

With reference to the circulation in the placenta, however, he thought it was a good plan in all cases to allow the blood to pass as much as possible from the placenta into the child. That blood passed from the placenta into the child had been proved; for it had been found, when the cord had been immediately cut, that the placenta weighed more than when it was permitted to remain for a little time attached to the child. Dr. Garrigues, therefore, thought that it was good practice, in cases of normal labor, not to cut the cord until pulsation had ceased, for in that way the child received a larger quantity of blood.

He did not resort to Marshall Hall's method, because he supposed it was generally considered that Sylvester's method was the better one.

He also thought that Dr. Jacobi's view regarding the value of a sudden impression and local pain, produced by the faradic current, was corroborated by the effects produced by the application of ice to the body of the child.

The question of viability of the child, as stated by Dr. Jacobi, was only recognized in France. The question did not arise in this country or in England regarding the age of the child.

It would be much simpler to state the question, Is the child now living? It would then be of no consequence whether or not it had had 180 days of utero-gestation.

As soon as any physiological act was made, we should give it as our opinion that the child was living.

Dr. Mackenzie, in speaking of the danger of producing paralysis by the prolonged use of the electric current, as alluded to by Dr. Jacobi, referred to the case of opium poisoning reported by Dr. Janvrin, in which the electrodes were applied steadily for several hours, and electricity apparently was the only means by which the life of the child was saved.

Dr. Hanks was of the opinion that, if the heart of the new-born child beat at all, and the child breathed, it should be regarded as a living child.

Dr. Thomas asked Dr. Hanks if his statement would apply to a four-months' child.

Dr. Hanks said that, without respect to the age of the child, he believed it to be physiologically a living child.

Dr. Jacobi remarked that there was no law which allowed such a child to be a living child.

Dr. Thomas said that he had seen a four-months' child whose heart beat for some time; but he was not willing to say that it should hold property.

Stated Meeting, April 18, 1878.
DR. W. T. LUSK, *President pro tem., in the chair.*

DR. HARRISON reported a

CASE OF ABDOMINAL PREGNANCY.

"I am induced to call the attention of this society to the following case, in the belief that it possesses some features of interest, especially as exemplifying the very great, if not insuperable difficulties in the way of exact diagnosis in the early stages of such a pregnancy.

On the 16th of February last, I was requested by Dr. A. H. Goelet, of West 52d Street, to see a patient in consultation with him, in the case of whom he had diagnosticated a retro-uterine hematocele. The history of the case as furnished me by Dr. Goelet, supplemented by additional facts elicited in answer to questions put by myself, was briefly as follows:—The patient, a colored woman, 28 years of age, has been twice married. By the first marriage, which was contracted at the early age of 14, she had two living children and one miscarriage. She has been married to her second husband about three years. By this second marriage she has had one child, born 14 months ago. Menstruation, which first made its appearance at the age of eleven, has always been regular until a short time since. Five months after the birth of her last child, menstruation reappeared and has recurred regularly until January last. About the 20th of that month, she had a discharge of blood from the genital passages, though only two weeks had elapsed since the last period. Being alarmed at this unusual event, and finding after waiting for three or four days that there were no signs of an abatement of the flow, she applied to Dr. Goelet for relief. On making a digital examination per vaginam and exploring the cavity of the uterus by the sound, Dr. Goelet convinced himself that there was no enlargement of the uterus. He did not detect at the time the existence of a retro-uterine tumor. On the 9th of February, Dr. Goelet was summoned to the bedside of the patient, who was suffering with intense pain in the lower part of the abdomen. She stated that, though feeling badly, she had attempted that morning to perform her usual routine of duties, and that while endeavoring to lift a boiler from the stove she had a sudden attack of pain in the lower part of the abdomen, a sense of bearing down, and at the same time she became very faint and was forced to lie down at once. Dr. Goelet ascertained by vaginal examination the existence of a large globular tumor occupying Douglas' space which had displaced the uterus forwards and encroached largely upon the rectum. Taking account of the subjective phenomena, as well as of the results of objective investigation, the doctor thought he was justified in pronouncing the case to be one of retro-uterine hematocele. When I met Dr. Goelet for the first time in the case, on the 16th of February, I concurred entirely with him in his view of the case, and though I knew full well the difficulties which present themselves when we attempt to make the differential diagnosis between retro-uterine hematocele and that form of extrauterine pregnancy in which the fruit-containing sac lies in Douglas' space, I believed I could exclude the latter, as the uterus was but slightly enlarged, the os uteri not open or its lips softened, there were none of the usual symptom of pregnancy apparently, and from the history of the case, as I received it, the tumor was suddenly formed. On the 24th of February, the patient was seized with a chill, followed by fever, the temperature mounting to 104° F. On the 28th, another chill succeeded by fever, with the temperature again reaching 104° F.

On Sunday morning, March 3d, as the thermometer showed a temperature of 105½° F., and vomiting and purging had set in, Dr. G. asked me to meet him again. On the afternoon of that day we met. On physical exploration per vaginam, I found, as Doctor G. had previously done, that there was evident fluctuation in the tumor, and as the symptom manifested by the patient plainly pointed to septicemia, we decided to open the tumor from the vagina. Before resorting to this measure, however, I proposed an exploratory puncture with a hypodermic needle, to ascertain the nature of the fluid we might expect to encounter. It was found to be a thin sanguinolent fluid, the offensive odor of which indicated putrefactive decomposition. I had entertained grave doubts about the correctness of the diagnosis of hematocele from the first, after carefully going over in my mind all the points of the case, as the tumor was much more elastic than any case of hematocele I had previously seen, and the character of the fluid now drawn off was calculated to confirm these doubts. I was not, therefore, surprised, when, after making an incision from the vagina, behind the vaginal portion, into the tumor, to find a cavity filled with a fluid and a fetus floating in it. The fetus, corresponding to about the fourth month of pregnancy, was removed, and the placenta left *in situ.* The cavity was then carefully washed out with hot water in which carbolic acid was dissolved. I suggested the propriety of establishing a constant flow of carbolized hot water into the cavity of the sac, in order to prevent the further absorption of septic matter into the blood, of course making provision for the escape of the fluid as fast as it entered.

With this view we obtained from a neighboring drug store a glass tube and some rubber tubing. A large stone jar was then filled with the carbolized hot water on a higher level than the bed occupied by the sick woman, and a siphon arrangement easily extemporized, the lid of the jar being adapted to compress the tubing only so far as to let the water flow in a slow manner, the patient lying on her back with a bed pan beneath her hips to receive the escaping fluid. On the morning of the day after the operation, the temperature had fallen to 101° F., and all the other symptoms were equally favorable. It was soon, however, found necessary to give up the siphon arrangement and adopt in its stead the simple injection into the cavity of the antiseptic fluid, at first as often as every hour of the day. Further details are unnecessary, suffice it to say that the patient made a good recovery, and when I examined her, last Saturday, I only found a small hardened mass posteriorly to the uterus. It is obvious that in this case the fetus had died, and that putrefactive decomposition was just beginning, and that the life of the patient was in extensive jeopardy from septicemia. With regard to the question of diagnosis, the chief diagnostic criteria upon which reliance is usually placed in forming an opinion as to the probable existence of extrauterine gestation relate in the first place to the behavior of menstruation, and in the second to the condition of the uterus. As to menstruation, the rule is that amenorrhea exists for a shorter or longer time, to be followed by metrorrhagia. Here there was no suppressio mensium. At the beginning of pregnancy, rather there was an alleged regular recurrence of the period, followed by profuse, long lasting, and non-typical bloody discharges. With reference to the changes in the uterus itself, it is a well attested fact that in extrauterine gestation almost constantly the uterus is hyperplastically enlarged, undergoing an augmentation in breadth and length, etc., the vaginal portion being softened and the os exhibiting the features peculiar to normal pregnancy. Here it was absolutely impossible to detect anything in the condition of the os or vaginal portion to suggest the idea of pregnancy. The enlargement of the whole organ, too, was so slight as to be hardly appreciable, though bimanual palpation was most carefully practised."

THE TREATMENT OF ALBUMINURIA IN PREGNANCY.

Dr. McLane added another to the cases already reported by him at a previous meeting of the Society.

On the 19th of March, 1878, he was called to see a patient who was advanced in her third pregnancy 7½ months. She was a perfectly healthy woman, 32 years of age. She had passed through her previous pregnancies without accident or complication.

When first visited, the patient complained of slight headache, and stated that, for a week previous, she had noticed there was some edema of the lower extremities. Upon examination it was found that the feet and legs were somewhat swollen, and the urine, discharged the same day, contained fully eighty per cent of albumen and a few hyaline casts.

A laxative was administered.

On visiting the patient the next morning (20th), it was found that the headache persisted and was very severe, that the laxative had been vomited, and that nausea had continued up to that hour, 10 A.M. She had passed only a small quantity of urine and it was loaded with urates. Ten grains of calomel were placed upon her tongue. Vomiting of a greenish fluid occurred several times afterwards, and the headache persisted.

There was no disorder of vision, and no sense of discomfort except that arising from the headache. Induction of premature labor was advised.

DR. THOMAS was called in consultation at 5.30 P.M., and sustained the opinion given. Accordingly a bougie was passed into the uterus upon the left side and a little posteriorly, but it struck against the placenta. It was then withdrawn, introduced upon the right side and carried to the fundus. The introduction of the bougie was followed by the use of the hot douche for fifteen or twenty minutes.

At 7 P.M. the doctor left the room. He returned at 8 P.M., and found that the headache had been much less severe since the use of the hot water, but the patient had noticed, as the gas was turned down, that sparks were flying about in the air.

The nurse was asked to turn the gas on a trifle, and as she did so, the patient at 8.15 was seized with the first of several convulsions. It was an ordinary epileptiform seizure, and, as soon as it had passed over, the patient was put thoroughly under the influence of chloroform. The bougie was withdrawn from the uterus, and it was found that the os had dilated to about the size of a silver half-dollar, and that it could be dilated easily to double that size. It was a vertex presentation.

Thinking that removal of the child would prevent another convulsion, version by means of external and internal manipulation was performed, and in exactly thirty-five minutes delivery was completed. The child weighed $3\frac{3}{4}$ pounds, was easily resuscitated, and was still living. The placenta came away almost immediately and without uterine contraction. As there had been no uterine contraction or pain, it was thought that the loss of a moderate quantity of blood would be of advantage; so the woman was permitted to bleed to the extent of ten or twelve ounces. The uterus was then crowded well down into the pelvis, and it contracted firmly. The patient, in the mean time, was under the influence of chloroform. The anesthetic was then withheld. At 9.15, she returned to partial consciousness, and inquired regarding her own condition and that of her child.

She was then permitted to go under the influence of chloroform, and was kept moderately anesthetized for one hour and a half. At exactly 11 P.M., she had her second convulsion. After the convulsion had ceased, the catheter was used, and it was found that the bladder was empty. The chloroform was continued, but not to the extent of producing profound narcosis. A large quantity of chloroform was required to produce moderate anesthesia.

At 12.30, the patient had her third convulsion. The chloroform was then pushed a little more vigorously. Notwithstanding its administration, however, the woman became almost maniacal; it was almost impossible to give her sufficient chloroform to keep her quiet. Twenty grains of calomel were placed upon the tongue. Hydrate of chloral and bromide of potassium were given by the rectum.

At 2.10 A.M., March 21st, the fourth convulsion occurred. Chloroform continued. No urine secreted.

At 3.30 A.M., she went into the fifth convulsion. The last two convulsions were extremely severe. The chloroform was then pushed to the extreme degree, and, in a measure, kept the patient quiet. Dr. Thomas was again called in consultation, and advised the use of hypodermic injections of morphia.

Accordingly, at 4.30 A.M., 10 ♏ of Magendie's solution were thrown into the arm, and the dose was repeated at 6.30 A.M. From 4.30 to 6.30, the patient was partially comatose, and remained in that condition up to 9 o'clock on the following morning.

Dr. Thomas also suggested that, after the woman remained quiet a certain length of time, an effort be made to establish free perspiration.

At 9 A.M. of the 21st, the catheter was passed, and about two drachms of urine drawn off, which was almost wholly albumen.

The patient was then placed in a hot pack, and, with the view of aiding in the production of perspiration, ℥ iv. of Squibb's fluid extract of jaborandi were thrown into the rectum.

In nine minutes from the time the jaborandi was exhibited, the patient broke out with profuse sweating, and also began to discharge from the mouth and both nostrils an enormous quantity of saliva. The discharge of saliva was exceedingly profuse, and continued for eleven hours. The fluid poured out of the mouth, and was forced through the nostrils in a double stream.

At 4 P.M., the pack was removed, and the patient wrapped in dry blankets. The catheter was then passed, and a little over a pint of tolerably clear urine drawn off. It contained about ten per cent of albumen and a few hyaline casts.

The breathing was moderately stertorous; temperature, 101° F.; pulse, 120; skin cool.

During the action of the jaborandi, the pupils were contracted, and there was no flushing of the face.

About 2 A.M. of the 22d, there seemed to be a slight lighting up of the intelligence, so that the patient answered some questions and recognized friends. From that time she began to recover consciousness somewhat.

During the next day, she passed a large quantity of urine, and the bowels moved very freely. The quantity of urine was estimated at five pints, and contained about ten per cent of albumen and a few casts.

While she was passing urine so freely, large quantities of water, probably two quarts, were given by the mouth, and some milk.

During the following day, she continued in very much the same condition; pulse good, skin warm, still perspiring, pupils contracted, and temperature 101° F. During the evening, the temperature fell to 98½° F., and the patient was very comfortable.

She continued in that condition until 5 o'clock on Saturday morning, when it was noticed that her respiration was rapid and anxious, that she was somewhat cyanotic, and she died as suddenly as though she had been shot.

Dr. McLane was of the opinion that the patient died because of the formation of heart-clot.

No autopsy was made.

As bearing upon the question of the treatment of albuminuria during pregnancy, there were several points in the case which Dr. McLane regarded as important.

In this instance, premature labor was induced nearly as soon as it could be after the condition was recognized.

With reference to the action of the jaborandi as an adjuvant to the hot pack for the production of diaphoresis, Dr. McLane was pleased with the result.

At the same time, however, it had seemed to him that the excessive salivation which followed its administration was rather disadvantageous to the patient. It seemed to exhaust her, and it was a question whether depriving the blood of so much fluid might not have produced a condition favorable to the formation of a clot.

Dr. McLane remarked that he was somewhat surprised, at a former meeting of the society, to hear the statement made that the induction of premature labor in these cases was not good practice. He had supposed that it was almost universally conceded that it was good practice, in any case in which albuminuria was present in sufficient severity to make us apprehend the occurrence of convulsions, to bring on premature labor, and that it would not be right to allow the patient to go on with her pregnancy.

In cases in which the quantity of albumen in the urine was slight, it might admit of treatment by means of diuretics, diaphoretics, etc.; but in cases in which anything like fifty per cent of albumen was present in the urine, he should not hesitate to advise the induction of premature labor, no matter how far advanced the pregnancy might be.

Another interesting point was the facility with which version was performed, and the labor terminated. It would have been impossible for the labor to have completed itself before the occurrence of the second convulsion at 11 P.M.; but the os was dilated by pulling upon the lower extremity of the child, and the entire labor completed in a little over half an hour.

Dr. Hanks believed that the plan of treatment adopted by Dr. McLane in his case was eminently proper.

The question as to how long we should trust to the effects produced by catharties, diuretics, etc., was not so positively settled as we could wish; but it had seemed to him that delay was justified only when there was a progressive improvement in the condition of the urine. If improvement in the condition of the urine did not manifest itself within twenty-four hours, we certainly should not hesitate to interfere and induce premature labor.

He regarded jaborandi as an excellent adjuvant in the treatment of this class of cases.

Dr. Noeggerath remarked, it had been stated in the Society that it was safe to treat a case of albuminuria in pregnancy by the use of temporizing measures, such as diuretics, diaphoretics, cathartics, etc.

It was his opinion, however, that, in many cases in which albumen to the amount of ten per cent was found in the urine, unless interference was made in a more radical manner, benefit for the patient came too late.

His experience had been that, under certain circumstances, when albumen was present in the urine of the pregnant woman, without reference to quantity, premature labor should be induced as rapidly as possible.

It was neither the amount of albumen nor the presence of other constituents of the urine that indicated the very near danger of convulsions. Because it was known that, in the majority of cases in which the kidneys had been carefully examined, convulsions having occurred, there had been found only moderate catarrhal nephritis; it was only in the minority of cases that interstitial nephritis had existed. Therefore, it was not the intensity of the disorganization of the kidneys which gave rise to the danger, the more so because in 30 per cent of the cases of pregnancy in which convulsions occurred, albumen was not present in the urine.

There were three conditions which, when they existed with albumen in the urine, Dr. Noeggerath regarded as indicative of immediate danger.

First.—That class of cases in which albumen in the urine co-existed with anemia or hydremia.

Second.—Those cases in which albumen in the urine co-existed with certain disturbances of the nervous system, such as severe headache, disorders of vision, prickling and crawling sensations in the extremities, etc.

Third.—Those cases in which albumen in the urine co-existed with high arterial tension.

If, however, after careful examination it was found that the pregnant woman was in usual health, and there was only a slight quantity of albumen in the urine, there was no reason why we should not first try and see what results could be brought about by the use of palliative remedies.

There was one remedy which had been pretty fully tested both in Europe and in this country, and that was *skimmed milk.* Dr. Noeggerath thought it was the only remedy now known to have a radical influence upon albuminuria. He was able to state, from his own experience, that the results obtained by its use were very satisfactory.

Still, this treatment would be safe only to the exclusion of the classes of cases of which he had spoken.

Dr. Noeggerath also directed attention to the use of chloral in the treatment of the albuminuria of pregnancy. He had read in the Edinburgh journal a recommendation of chloral in the treatment of general convulsions, and the writer had added that the remedy also had a beneficial effect upon the condition of the kidneys. About six months ago he saw a girl who had a severe convulsion. The urine was examined and found to contain a very large quantity of albumen, fibrinous casts, and degenerated epithelium. Treatment was commenced by the use of increasing doses of chloral, beginning with scruple doses and increasing to half-drachm doses. The remedy was administered every night. The albumen immediately began to disappear from the urine, the quantity gradually diminished, and at the end of six weeks, the urine contained no albumen whatever. The chloral was discontinued. At once albumen reappeared in the urine. The chloral was renewed, and the albumen immediately disappeared from the urine.

To make the test more complete, chloral was administered alternate weeks, and exactly as the remedy was discontinued albumen appeared in the urine, and when it was renewed the albumen disappeared.

The chloral was continued five or six months, andat the end of that time, when discontinued, albumen did not reappear in the urine.

On last Saturday, the girl had another convulsion. The urine was found to contain albumen; chloral was again administered, and the albumen disappeared.

Dr. Noeggerath, therefore, believed it probable that chloral had a direct influence upon the secretion of albumen by the kidneys. It was impossible at present to explain the action of choral in that respect, but there was one fact which was peculiar. It was quite probable that the albumen in the time during pregnancy was not ordinary serum albumen, but a modification which made it more like hen's-egg albumen. It had been demonstrated by a Dutch physician that the chemical quality of albumen was changed during pregnancy, and Dr. Noeggerath thought it quite possible that the presence of chloral corrected that change.

Still the question must be investigated farther, and he was not willing to draw any definite conclusions based alone upon the single case which had fallen under his observation.

Dr. Lusk asked if it was not possible that the albumen in the urine in Dr. Noeggerath's case was due to the convulsion.

Dr. Noeggerath thought that it was not, for only a single convulsion occurred, and albumen was present in the urine with intermissions for five or six months; whereas the albumen which appeared in the urine after a convulsion did not remain longer than twenty-four or forty-eight hours.

Dr. McLane remarked that he had treated four or five cases of albuminuria of pregnancy by the use of skimmed milk, and without a single success. They were all cases in which a small quantity of albumen appeared in the urine early in pregnancy. In one case albumen was found as early as the third month, and steadily increased in quantity as long as the woman took skimmed milk. As soon as the milk was discontinued and a farinaceous diet was instituted, the albumen disappeared.

In the non-pregnant woman, however, and in men he adopted the milk treatment, and had found that, under its influence, the albumen disappeared from the urine and digestive disturbances were removed.

Dr. Mann remarked that it had been stated by Roberts, an English authority, that it was impossible to form a correct estimate of the quantity of albumen in a given specimen of urine by simply allowing the precipitate to settle in the test tube.

Dr. Noeggerath thought that an approximate estimate could be made which was sufficient for practical purposes.

Dr. McLane asked if any member had seen cases in which jaborandi had produced such profuse salivation as occurred in his own case?

Dr. Hunter said that he had seen profuse salivation produced by the use of ¼ grain of the nitrate of pilocarpin.

Dr. Garrigues suggested that the large loss of fluid in Dr. Mc-

Lane's case was due to the large dose of jaborandi administered (ʒ iv. fl. ext.). He had never employed the drug in the treatment of albuminuria of pregnancy, but had used it in doses of about one-fourth the size used by Dr. McLane, in the treatment of uremia from Bright's disease in the non-pregnant, also in ascites from liver cirrhosis, and it had produced profuse perspiration with only slight salivation.

Dr. Watts had used Squibb's fluid extract of jaborandi in drachm doses, which produced profuse perspiration, salivation, and violent emesis. In a case of chronic bronchitis, he had used the remedy in doses of five drops every three hours; by such doses the skin was kept moist, and the patient was much relieved. He had also administered ten drops of the fluid extract to an old lady who suffered from severe headache, was drowsy, and was passing urine having a specific gravity of 1004, but no albumen. The remedy produced decided perspiration and salivation. The dose was diminished to six drops and decided perspiration was produced, but only moderate salivation. Immediately after the action of the first dose, the specific gravity of the urine rose to 1015 and remained at that point.

Dr. Lusk regarded the sudden death in Dr. McLane's case as a foregone conclusion. He was somewhat surprised that Dr. McLane should assume that induction of premature labor, under the circumstances to which he had referred, was the generally accepted practice of the present time. Dr. Lusk was of the opinion that only a very small minority of the profession would indorse the procedure. There was much to be said in opposition to the view held by Dr. McLane, but the lateness of the hour precluded the possibility of making extended remarks. He wished, however, to say that he believed the cases of albuminuria occurring during pregnancy in which interference was required was limited to a small number. It occasionally happened that the life of the woman was placed in imminent peril by that condition, and that the induction of premature labor seemed to be the only means by which her life could be saved. His opinion, however, was that, in the great majority of cases, in which the woman simply complained of headache, dizziness, etc., and with these symptoms there was albumen in the urine, it was much better to give her palliative treatment and wait, than to resort to active interference.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Reported by W. H. H. GITHENS, M.D., Secretary.

Stated Meeting, May 2, 1878.

The President, JOHN H. PACKARD, M.D., *in the Chair.*

DR. W. H. PARISH read the history of a successful case of

OVARIOTOMY, COMPLICATED BY ADHESIONS AND SUPPURATIVE INFLAMMATION OF THE CYST.

"Mrs. C., native of this country, with a healthy family history, began to menstruate when about sixteen years of age. During the first few years, dysmenorrhea was a prominent symptom. Subsequently the menstrual function was performed with ease, and until within a few months prior to the operation of ovariotomy, with regularity. She has been twice married. With her first husband, there was one conception, which terminated in an abortion at the second month. She never afterwards became pregnant. She has at no time been under treatment for uterine disease.

In Nov., 1876, she noticed an enlargement of the abdomen, it being most marked, though not very distinctly so, toward the left iliac region. For months prior to this, there was what she describes as a "puffing" about the umbilicus—a symptom that strongly impressed her as being connected with the growth of the tumor. During the three months following the first appearance of the enlargement, there were morning nausea and vomiting, with fulness of the mammary glands, and an increase of the pigment about the areolæ, and along the linea alba. There was also a slight secretion of milk.

In Jan., 1877, after an examination by some medical gentleman, she was pronounced to be in the fifth month of pregnancy.

The abdomen continued to increase in size, and soon the nausea and vomiting ceased. The breasts began to shrink and the secretion of milk stopped.

In the fall of 1877, there was slight pain in the tumor, but at no time was there pain or fever sufficient to confine the patient to bed. Urination became frequent, but was painless; defecation remained normal.

In Jan., 1878, she came under my care, presenting the following conditions. She had lost in strength and in flesh. Menstruation still occurred, though at irregular intervals, and the flow had diminished. The abdomen was about equal in size to that of pregnancy at the seventh month. The enlargement was greatest to the left of the median line, though the difference in the two sides was but slight. The superficial abdominal veins were slightly enlarged. An uninterrupted wave of fluctuation could be detected in all portions of the tumor. Its surface presented no inequalities. Percussion gave dullness over all the most prominent portion of the abdomen, with resonance across the epigastric region, and when in the sitting position, with resonance in either lumbar region, but most decided in the right one. There were no evidences of ascites, and the lower extremities were not edematous.

Although there was uniform and universal fluctuation in the tumor, it possessed an unusual degree of tension. When the patient was recumbent, there was no flattening of the tumor itself, no bulging of its sides, no loss of its globular shape. The situation of the tumor was changed to but a limited degree with changes in the position of the patient. The anterior abdominal wall, when grasped with the hand, could not be distinctly moved independent of motion communicated to the tumor. The movements of the diaphragm imparted a corresponding, yet limited motion to the mass. On digital examination, the uterus was found a little below the normal height, the os pointing backward, and the fundus thrown forward. In Douglas' pouch a foreign body could be detected, with an obscure sense of fluctuation, the tumor evidently not dipping deeply into this space. When two fingers were firmly pressed upwards posterior to the uterus, the tumor seemed elevated, and when the uterus was itself pushed upward, the whole mass was also raised. The sound showed the uterus to be normal in length, the fundus deflected forward. With the sound the uterus could be moved without imparting any perceptible motion to the tumor. The diagnosis of a unilocular ovarian cyst was arrived at. This diagnosis was subsequently confirmed by Drs. E. Wallace and J. E. Mears.

On Feb. 23d, 1878, the patient was seized with a burning pain in the tumor, and during a few subsequent nights, it seemed to the patient to be filled with "living coals of fire." There were also occasional general chilliness and evening fever. These symptoms were mitigated by the use of opium and quinine, and by rest. On February 26th, I introduced a small aspirator needle into the tumor and drew off two ounces of the fluid. This presented the gross appearances of dense pus of a light-brown color tinged with gray. There was no odor of putrefaction. Under the microscope, numerous pus-cells were found, but its general microscopic character was pronounced by Dr. Mears to be that of a fluid of an ovarian cyst.

It was evident that the interior of the cyst had undergone a suppurative inflammatory action, and that the general health of the patient was beginning seriously to suffer. It was also evident that the risks attending an ovariotomy were probably materially enhanced, for it could not be determined to what extent the exterior of the cyst or the peritoneum might be involved. And yet the very existence of this complication urgently called for an early performance of ovariotomy.

On March 6th, ovariotomy was performed, the bowels having been previously emptied by means of castor-oil and an enema.

The following gentlemen were present and aiding during the operation, viz., Drs. Duer, Mears, Allis, Loder, and Anderson, and Mr. Ames, a medical student.

The patient being placed on a table, with the head and shoulders elevated, and the feet resting on a chair, ether was most satisfactorily administered by Dr. Allis, by means of the inhaler devised by him. An incision three inches in length was made along the linea alba, the middle of the incision being about midway between the umbilicus and the pubes. Very gradually the incision was carried through the abdominal wall, yet it was impossible to determine when the tumor had been reached, though the dense grating of the knife in the tissues awakened a suspicion that it had been carried through the abdominal wall proper, and was about to pass through the wall of the tumor itself. Soon the welling up of the purulent contents verified this suspicion. It was plain, however, that this fluid could not, when thus escaping, get into the peritoneal cavity, because of firm extensive adhesions about the line of incision. A trocar, not being needed, was not used. The opening in the tumor was made large enough to admit of the ready and complete escape of the fluid. The question as to the extent of the adhesions became an important one. Anteriorly the adhesions were evidently extensive, and so very firm and close that it was difficult to tell where the tissue of the tumor ceased and that of the abdominal wall began. The line of demarcation was determined by the difference in color of the two tissues, that of the cyst-wall being pale and also dense and fibrous. After these adhesions had been partly broken up, the question arose as to the propriety of stopping here in the operation, and of treating the case as one of open tapping. Did these adhesions, so extensive anteriorly, extend and involve vital organs of the abdomen or of the pelvis, so as to render the completion of the operation impossible without insuring a fatal result? Such was the question presenting itself for immediate decision. But vaginal examinations, made repeatedly prior to the operation, had strongly impressed me with a conviction that there were no posterior adhesions, and this conviction was re-enforced by the following observations. After the cyst had been emptied of its contents, and when with vulsellum forceps the anterior wall of the cyst was raised, the posterior cyst wall approached the anterior one, and there was no stretching of the cyst-walls, as would have occurred had there been firm adhesions to the posterior abdominal wall or to one of the but slightly movable pelvic viscera. Again introducing my hand into the cyst, and examining the posterior cyst-wall, it did not possess the thickness or the density of the anterior wall, indicating that there had not been sufficient inflammation posteriorly to give the posterior wall such characteristics. The operation of removal was continued, and the unpromising beginning was favored with an auspicious termination. As soon as the anterior adhesions had been torn up, the cyst was easily drawn out through the abdominal incision. There were no other adhesions, except a limited one to the omentum. The omentum was in a state of great congestion, but there were no evidences of peritonitis other than that upon which the adhesions depended.

The tumor had sprung from the left ovary. The pedicle was of good length, and was secured with an Atlee's clamp, and the stump was carried out through the lower end of the incision. The adhering portion of the omentum was included in a ligature and was held between the lips of the incision with a hare-lip pin. It was necessary to introduce only one deep suture, this being passed through the peritoneum. A superficial one was introduced just above the pedicle. The sutures were of iron wire. There was no sponging of the peritoneal cavity, as none of the contents of the cyst escaped into it, and there was but very slight bleeding.

The patient recovered from the anesthetic without evidences of shock, and without vomiting, except a slight attack due to the taking of liquids a few hours after the operation. The pulse at no time rose above 100, either during the operation or during the subsequent treatment. The temperature, until convalescence, ranged from 100½° to 102½° F. On the fourth day, there was a profuse purulent discharge from the vagina, probably from the remains of the left Fallopian tube. From the fifth to the eighth day, the discharge was menstrual in character; menstruation thus occurring twenty days subsequent to the last period. There was no discharge from the pedicle. The bladder became quite irritable, and urination was very frequent. The desire to urinate would come so suddenly and be so urgent that it was impossible for the patient to avoid wetting the bedding. To relieve the bladder, one of Skene's self-retaining catheters was introduced with great comfort to the patient. It was daily removed and cleansed, but it was not until after the tenth day that its use could be dispensed with. On the tenth day, the wires and the pin were removed, and on the nineteenth day, the clamp came away. There was no movement of the bowels until the fifteenth day, when they were opened by enema. During the after-treatment, opium was liberally administered, and sleep was further secured by the occasional use of chloral. The recumbent position was strictly observed until the twelfth day. On the twenty-first day, the patient was allowed to sit on the side of the bed, and a few days later, she was able to walk about the room.

On April 13th, menstruation recurred and was normal in character. Recovery became complete.

The cyst, here presented, is a single one, with a firm, dense wall anteriorly, and a soft thinner one posteriorly. A portion of the Fallopian tube remains connected with the cyst. The fluid also shown presents the same character as that drawn with the aspirator."

Dr. J. L. Ludlow inquired if the fluid, when drawn from the tumor, was of the same purulent character as the specimen now exhibited.

Dr. Parish replied that, in appearance, it had not changed. Its color was somewhat modified by the presence of a small quantity of blood.

Dr. Ludlow had seen one case of abdominal tumor discharge spontaneously through the umbilicus an offensive purulent matter resembling in appearance that exhibited by Dr. Parish.

Dr. Wm. Goodell mentioned that Drs. Wells and Nussbaum, in cases where similar adhesions to the anterior abdominal wall existed, had lengthened the external incision to the extent of the adhesions, and thus obtained a starting-point for separating the tumor from the abdominal wall.

Dr. Parish wished to avoid the increased danger which would result from a larger incision.

Dr. Albert H. Smith read for Dr. M. O'Hara, the following history of a case of

EXTRAUTERINE PREGNANCY, VAGINAL SECTION, DEATH IN THREE DAYS.

"I was called, on January 12th, 1878, to visit Mrs. W. M. She was a hearty-looking woman of the age of 29 years, and a native of England. She states that this is her fifth pregnancy, and she has had three full births and an abortion at two months, the latter occurring two years and eight months ago. She last menstruated September 29th, 1877. She has a positive conviction that she is at present pregnant, but feels that there is something wrong with her and feels herself very different from what she has been in her former pregnancies. She began to feel pain in the lower part of the abdomen and back two months ago, which continued off and on, and recently increased in severity, compelling her now to keep the bed, and that the recumbent position only relieves her for a while. When first attacked, two months ago, she suffered for a short time with obstruction of the bowels and complete stoppage of urine which came on suddenly. Since that time she has constantly suffered from incomplete and painful urination and defecation. She makes water very frequently and with much distress. She has had, at intervals during these two months, sharp, stinging, and distensile pains in the pelvis, and much soreness and distress about the rectum. She never had sick stomach in a former pregnancy and has not vomited during this, and tnere are no mammary signs of pregnancy.

Her pains recently have changed; formerly they were colicky pains around umbilicus, rectal and bladder distress; to these have been added pressing or bearing-down pains and pains in the back like labor pains.

Upon examination I found a tumor in the retro-uterine space, appearing to me to be a retroflexed gravid womb. Her suffering during the examination was intense, and the examination thus rendered incomplete. I placed her upon narcotics, and as she was costive, ordered Pulv. glycyrrhizæ comp. Fearing that it was more than a retroflexed gravid womb, which, with her sufferings for two months, would by this time have resulted in a miscarriage, especially as she had aborted in her previous pregnancy, I asked counsel of Dr. J. G. Allen, who saw her with me the same evening. A pretty thorough examination was made; the tumor was painful to the touch, and it was so closely attached to the uterus that it seemed impossible to ascertain definitely whether it was actually a tumor or the fundus of a retroflexed uterus; the neck was slightly elongated and pushed toward the pubes, but not compressed against it. The condition of the parts was such that it might easily be considered as a curvature of the neck backwards, as in retroversion. The tumor per rectum felt elastic, too tender for a gravid uterus of two months' standing, and there was no perception of a body floating in a fluid as might be expected in an amniotic sac.

The sound was not used in the diagnosis, not wishing to precipitate matters while yet uncertain as to its being a gravid womb. The patient was placed in the knee-elbow position, to see if the tumor could be elevated any; the mobility was found to be very slight, and any effort in that direction caused too much pain to continue it. The neck is found in this position to be thick, long, soft, large, and a complete circle, moderately close to the pubes. The finger can be carried easily behind, between it and the pubes; not sufficiently, however, to ascertain if the body of the uterus is above, or in the retro-uterine space. The abdominal walls are loaded with fat, and it is impossible to determine a tumor (uterus) above the pubes upon palpation. Extra-uterine pregnancy was suspected, and it was decided upon to palliate and allay pain with opiates, etc., and that it would be better to wait a few days for more urgent symptoms, and in the mean time to make no attempts to raise the tumor, in the present uncertainty of the diagnosis.

January 14th.—The examination was repeated, matters seemed in the same condition, except that the patient was much more comfortable, and not suffering. The neck of the uterus was softer and os more patulous. It was still deemed advisable not to use the sound or to interfere actively, but rather to await the developments of an assured diagnosis.

January 20th.—The patient passed a decidua, a complete cast of the uterine cavity, after several hours' pains, like labor pains, attended with hemorrhage freely and some clots.

January 21st.—Dr. J. G. Allen met me in consultation. The os uteri is open, quite patulous; admits the finger to the first joint. The neck is drawn higher up above and behind, and is about as close to the pubes as on 14th. The tumor occupies nearly the same position, pressing on the rectum as before. It appears still so closely attached to the uterus as to make it appear uncertain whether the neck belongs to the tumor or to the uterine body above the pubes, the latter not as yet appreciable by us. There is no bleeding, and the rectum and bladder perform their functions without pain. The neck is not quite as much curved; appreciably straight and not so close to the pubes. The tumor does not press on the rectum so much.

The sound enters the uterus at four and a half inches anteriorly, upwards and behind the pubes, and is felt through the abdominal walls in the fundus of the uterus, partly above the brim of the pelvis. The uterus presses over well to the left of the median line. A strongly flexed sound enters, passing easily forward, to the depth of four and a half inches. The uterus is empty and enlarged, and a tumor remains on the retro-uterine space, estimated at four inches in diameter, which does not move very much with motion communicated to the uterus. There is evidently no retroflexed gravid womb, but an extra-uterine pregnancy. The patient was clamorous for relief from the state of suspense and anxiety she was in, and on the 25th Dr. Albert Smith was also called in consultation, to decide what was most advisable to be done to anticipate the rupture of the sac and to prevent death from internal hemorrhage, its usual result.

On examination at this time, uterus was found one inch above the plane of the sub-pubic ligament. The tumor rests one inch lower, nearly on the floor of the pelvis. She has frequent pressing-down pains and tenesmus. The neck of the uterus is one inch higher than at first examination. The tumor seems to rotate upon its transverse axis, and as it descends, the neck is drawn up and the uterus pulled back. There is intense soreness of the rectum. The uterus is now forced aside to the right. Pressure on the right side does not communicate motion to the mass by the finger in the rectum, but pressure on the left side does. The tumor is descending and appears closely attached to the back of the uterus. Present appearances would negative the possibility of its rising out of the pelvis into the abdomen. The various means of relief were discussed, electro-puncture, injections, galvanism to destroy the growing fetus, and vaginal section was resolved upon. It was thought safer to open the sac in Douglas' space, remove the fetus and cyst, and thus leave means for drainage and irrigation. The symptoms portended speedy rupture of the cyst, but it was deemed safe to wait until 11 A.M. on January 27th. It was not at the time deemed imperative to operate instantly.

The operation was performed by Dr. A. H. Smith, in presence of Drs. Levis, J. G. Allen, and myself.

It was decided to open the cyst through the vaginal wall by means of the thermo-cautery knife of Paquelin, to avoid hemorrhage, lessen septic risks, and insure a full exit for subsequent discharges. The patient being etherized, a large cylindrical speculum of hard rubber, two inches in inside diameter, and two and a half inches long, was carried into the vagina and its extremity driven forcibly against the vaginal investment of the tumor at a point recognized by the finger through the short speculum as its most prominent part. Examination through the rectum confirmed the correctness of the application. Slight pressure being made from above to render the wall tense, the knife, raised to a full red heat, was quickly plunged into the mass and withdrawn. About a half-ounce of opaque white fluid escaped from the puncture. The mass through which the knife penetrated was observed to be thicker than a cyst wall should be expected to be. A Wilson's dilator was now introduced to enlarge the opening gently for exploratory introduction of the finger. Its use was followed by a profuse hemorrhage, and the insertion of the finger after removal of the speculum showed clearly that the placental site had been struck, and that the puncture was through the placental mass. The point of the finger was introduced into the cyst to its full length, the hand being carried forcibly up into the vaginal cavity, but the fetus could not be felt. A larger opening being necessary, the speculum was again introduced, and the knife, again heated, was inserted into the orifice of the wound and carried downward and backward toward the posterior wall of the cyst, enlarging the opening to about three inches in length. The hemorrhage continued profusely, the cautery knife was altogether unavailing in checking it, and nothing remained but to endeavor to peel off the placenta from its attachments around the point of puncture. This was done without much difficulty, and the bleeding stopped. The opening by this time was quite sufficient to allow the hand to enter the peritoneal cavity, and it was carried upward gently in search of the fetus, which was found lying loosely in the abdomen against its parietes, in the region of the transverse colon upon the left side. It was grasped between two fingers and easily extracted. An exploration of the upper pelvis showed an absence of clots in the peritoneal cavity, and there was no further hemorrhage externally. The patient had borne the operation quite well, and was put to bed after insertion of an opium suppository.

3 P.M.—Pulse, 120; respiration, 25; thermometer, 101. There was some retching. Hypodermic injections of morphia and opium suppositories freely used. There was no subsequent hemorrhage.

During two days succeeding, she was comfortable, no complaints, not suffering from the shock or pain apparently. She took nourishment, beef tea, brandy and milk, etc., and exhibited no marked symptoms of peritonitis or septic irritation. Her pulse and respiration varied, but the thermometer at no time marked over 102°, generally was 100°. On the third day, hiccoughing, retching, and vomiting set in with anorexia, some tympany, and abdominal pain. There was now an offensive discharge, and the cavity was gently irrigated with Peaslee's solution. She died from exhaustion about eighty-six hours after the operation. The catheter was freely used, but there was very little urinary secretion. Her breasts became full and contained milk after the operation.

The post mortem was made on 31st, about four hours after, by Dr. De Forest Willard. Permission was given only to inspect the cyst, and the parts were obtained which I herewith present to you. The body was still warm. The abdominal walls were thick and loaded with fat. On opening the abdomen, the omentum seemed darkened and apparently in the commencing stage of gangrene; was dragged down and adherent to the anterior parietes and also to the intestines. The loops of intestine were adherent to each other at various points. The peritoneum covering the intestines was blackened at many places; the congestion of it having been apparently so intense as to destroy its life. There was a small amount of peritoneal effusion. The adhesions of the omentum to the anterior parietes and to the posterior part of the pelvis seemed old. The uterus was in its normal position. Immediately behind the body of the pubis is seen the ruptured opening of the cyst. There were some darkened, breaking down blood-clots, and about half an ounce of semi-sanious pus. The catheter passed through this opening, emerged behind the os uteri, and out of the vulva.

No proper cyst-wall could be discovered, but the walls, in addition to the amnion, seemed to be made up, anteriorly, of the posterior face of the uterus, the broad ligaments, and the ovaries; posteriorly the walls consisted of the rectum, the sigmoid flexure, and inflammatory exudation. The sides of the cyst-wall were composed entirely of connective tissue condensed by inflammatory action, and was limited by the lateral walls of the pelvis. The omentum was also dragged down, and being thickened, contributed to the formation of the right anterior and lateral walls of the cyst. The left ovary was dragged downward and backward, and was completely imbedded in a dense, dark mass of inflammatory tissue composing the left portion of the anterior wall. The ovum had its origin from this organ. The right ovary, while partly included in the wall of the cyst, was not nearly so deeply imbedded. The amnion was probably removed during the operation, and the whole interior of the sac was darkened and much softened. The most dependent portion of the cyst was behind and a little below the os uteri.

The uterus is four inches long, three inches wide, and one and a half inches thick. The walls, anteriorly, are three-fourths of an inch thick. The mucous membrane of the uterus is softened and shreddy. Both Fallopian tubes are obstructed, a probe cannot be passed through. The wound of operation has darkened, ragged edges, but not sloughing. It lies immediately behind the os uteri; when stretched is three inches laterally, and two inches antero-posteriorly."

Dr. Wm. Goodell approved of the action of Dr. Smith in this case. He recalled the history of a case in which he had been interested, about ten years ago, and which had died from undiagnosed internal hemorrhage. In another case, which had occurred in the practice of Dr. Perkins, Dr. D. Hayes Agnew was called in consultation, and diagnosed pelvic cellulitis. Dr. Goodell being consulted soon after, considered it to be a case of pelvic peritonitis. A peculiar symptom in all these cases is acute pain occurring paroxysmally, and with a tendency to collapse. In this case, some three months afterwards, Dr. Parry was consulted, and applying his ear to the abdomen of the patient, distinguished the fetal heart-sounds with unusual distinctness, and diagnosed normal pregnancy. The case went to term. The child died, and remained undelivered. The mother failed in health. As the os uteri could not be found, Dr. Goodell was again called in. He found the os high up behind the symphysis, and now considered the case to be one of retroverted gravid uterus. At a second visit, the idea of extrauterine fetation occurred to him. This fact was verified by further examination. All operation was refused, and the woman died.

Another case, which he had at first supposed to be an extrauterine fetation, he afterwards found to be pelvic cellulitis. He mentioned this to show the difficulty in making a correct diagnosis.

In a third case, the pregnancy was recognized; the os uteri was patulous, so that the interior of the uterus could be examined by the finger, and the diagnosis of extrauterine fetation was easily made out. But surgical aid was refused, and the woman died.

In a fourth case, the outlines of the child could be readily made out through a thin abdominal wall. The pregnancy was ventral and a good one for operation, but interference was not allowed, and this woman also died from septicemia.

Dr. Goodell also stated that he had at the present time under his care a woman who had been married when very young, and who became the mother of one child. After nine years of married life, without further pregnancy, the husband died. Last spring, the woman married again. Her last catamenial discharge occurred in December. She is apparently pregnant, and has pains of a paroxysmal character, ending in apparent collapse, and resembling attacks of peritonitis. He suspects extrauterine fetation, but cannot make the diagnosis sure enough to satisfy himself. In April, a profuse menstrual flow occurred, and a membranous bag was discharged, which was evidently a decidual cast, but which he did not see. The parts were too sensitive to allow of an examination, and the sound was not passed. An examination was subsequently made under ether, and a post-uterine tumor was discovered, pushing the uterus upward and forward. The uterus was quite movable, thus proving the absence of cellulitis. The sound entered five inches; its withdrawal was followed by a discharge of blood. The abdominal walls were fat, and neither the tumor nor the uterus could be defined by external palpation. At an examination on May 1st, under ether, the sound passed full five and one-half inches, and was not very movable, thus showing that the cavity of the uterus was enlarged in length only. He introduced his finger into the cavity and found a thickened mucous membrane. There is no morning sickness, no secretion of milk, and no areola around the nipples; but the patient declares that these were not present in the first pregnancy. He confessed that he was much perplexed as to a diagnosis.

Dr. W. H. Parish suggested that a more complete examination could be made by the introduction of the hand into the rectum.

Dr. Goodell had introduced his fingers into the rectum, but did not wish to subject his patient to the risk of laceration of the bowel, which had so frequently followed the introduction of the whole hand, until the case had assumed a more critical aspect. He had not yet made up his mind as to his future course, but would in the mean time wait, because, if extrauterine, it was probably ventral, and would go to term.

Dr. J. G. Allen said he had seen five cases of extrauterine fetation. The first case had been seen many years ago, in consultation with Dr. A. H. Smith, and the condition was mistaken for a retroverted gravid uterus. This case had been mentioned at previous meetings of this Society. The next two cases closely resembled the first one, the tumor in each case being situated in the position of the vaginal cul-de-sac, and really very closely resembled the retroverted gravid uterus. In both these cases he had made the diagnosis early, and the fetal life being destroyed by electrolysis, the mothers both recovered safely. The fourth case was under his care for four months. The tumor was ventral, and though following closely in point of time the two cases he had treated successfully by electrolysis, the diagnosis was yet not made out till long after, when some fetal bones were passed by the rectum. The fifth case was that related this evening in Dr. O'Hara's paper. This he had declared his belief to be an extra uterine pregnancy at the first examination, but did not consider his opinion sufficient to justify active treatment till the expulsion of the deciduous cast proved it. In nearly all cases, the diagnosis must remain in doubt until a deciduous cast of the uterus is thrown off. He had one case of a tumor occupying the position of the vaginal cul-de-sac coincident with pelvic cellulitis, in which the colicky pains with tendency to collapse were present, and which for a time he suspected to be extra-uterine pregnancy; but the tumor was found at the post mortem to be a cancerous ovary. In fact, this case quite resembled in many of its details the one described this evening by Dr. Smith, and answered quite closely the description so often given of the pains of extrauterine pregnancy, so that whilst he agreed with Dr. Goodell in regard to the very great difficulties of diagnosing extrauterine pregnancies, he did not think that even the paroxysmal pains with tendency to collapse could be depended upon as of certain value, or as disproving an ovarian tumor, as suggested by Dr. Goodell. The operation of either ventral or vaginal section for extrauterine pregnancy was certainly very hazardous. The peritoneal cavity is opened and the placenta is left behind, and there is great risk of death from exhaustion or septicemia. Electrolysis avoids these dangers. Since the publication of his own two successful cases, another has been reported by Drs. Loving and Landis, in the *Ohio Medical and Surgical Journal* for October, 1877, Vol. II., page 389.

Dr. De Forest Willard considered that the results of any operation would depend upon the character of the walls of the cyst containing the fetus. If the walls were firm and well defined, the abdominal cavity would not be opened, and the dangers of peritonitis would be avoided. If the case described by Dr. Smith had not been operated upon so soon, the cyst walls would have been hardened, and would have withstood pressure and not allowed the fetus to escape into the abdominal cavity.

Dr. Allen had favored the operation of vaginal section in Dr. O'Hara's case, but thought the existing circumstances would not have been wholly unfavorable for the destruction of the fetus by electrolysis. Such tumors had been carried, after becoming quiescent, for forty years harmlessly. The operation of vaginal section sounded nicely in description, and in the imagination its performance seemed very simple and easy of execution, but it was not so attractive in retrospect, and was certainly a hazardous one. There could not possibly be any means of knowing whether the placenta would be first encountered, as in this case, or not.

Dr. Smith said: "In looking back upon the history of my first case of extrauterine fetation, mentioned by Dr. Allen, I was comforted when I found that my mistake in diagnosis was the almost universal one, that of considering the tumor a gravid uterus retroverted. There were present in that case the symptoms of pregnancy, cessation of the menses, and vesical irritation in a patient who, after a fruitless marriage of four years, had been under treatment for stenosis with retroflexion. At about three months, symptoms presented of threatened abortion, but which subsided promptly upon the use of opiates, and as no further distress or abnormal condition arose, no examination was made. Toward the end of the sixth month, I was sent for, to see her in great distress, having had for several days pain of an agonizing character, continuous, yet with paroxysmal increase, simulating labor pains. The abdomen was large and slightly tympanitic, and the tumor of the uterus could be felt as a smooth uniform mass above the pelvic brim, though not as high as the period of gestation would require. A vaginal examination showed the pelvis to be completely occupied, except just within the vaginal entrance, by a round mass of uniform surface, equilaterally placed in reference to the median line. Behind the pelvis, and with the os uteri on a level with or a little above the sub-pubic ligament, was the cervix, soft and slightly patulous, pressed forward forcibly by the tumor behind, with which it was apparently continuous, there being no seeming line of separation between the two, and motion in one being communicated to the other. In short, there seemed to be clearly an impaction of the pelvis by a gravid uterus retroverted. The patient had already high temperature and pulse, with great abdominal tenderness. The fetal pulsation could not be distinctly made out, although the placental murmur was well marked toward the left iliac fossa. I was shown, lying in a vessel of urine and feces, what was said to be a clot which had just passed, and which, having no suspicion of the character of the case, I did not examine. On the following day, Drs. J. G. Allen, George Pepper, and H. B. Hare examined the case with me, and later, Dr. C. H. Thomas, and the unvarying opinion was that my first diagnosis was correct. A colpeurynter was, by agreement, introduced beneath the mass, the patient being etherized, and continued attempts made to restore the position of the uterus and carry it up into the abdominal cavity. No effect whatever followed, and after much effort the attempt was abandoned until the next day, by which time the local evidences of peritonitis and the alarming constitutional symptoms forbade any further manipulation. Death rapidly followed, and at the autopsy we discovered the true condition of things, viz.: an extrauterine cyst, developed apparently in the ovary, the placenta being seated upon an expansion of the Fallopian tube of the left side. No ovary could be found upon that side, and the cyst-wall, which was firm and well developed throughout, was apparently formed of the cyst-wall of the ovarian vesicle and the expanded ovary. Had this patient been seen before any local disturbance or constitutional disorder had developed, and could have been studied at leisure, it would have afforded an admirable case for operative interference.

In the case under discussion, there seemed but little choice of procedure, as there was no time for delay, and the question was simply how to relieve the woman most quickly and safely of a mass which was already endangering her life by the development of peritonitis. Neither the course suggested by Dr. Willard, of waiting for the development of greater firmness in the cyst-wall, nor Dr. Allen's proposed electrolysis (with the necessary slowness of effect), could fulfil the indication for immediate relief. Diminution of the bulk of the cyst was alone the means promising any good result. Such positive evidence, local and constitutional, as was present of peritonitis already developed, and the extreme prostration of the patient, made the operation of gastrotomy one of great danger in its immediate effect, and promising little prospect of recovery ultimately, from the ordinary subsequent dangers of septic disease and non-union. Dr. Gaillard Thomas had had such good results, even under unfavorable conditions, from puncture of the cyst through the vagina by the galvanic knife, and Dr. Parry so highly lauds this method of removing the fetus, almost to the exclusion of any other, that it seemed clearly warrantable to use the thermo-cautery knife in the same way, as promising in every respect as good results. The very grave complication of striking the placenta could not be foreseen, it being impossible by any known method of auscultation or touch to decide the position of the placenta in a tumor completely within the pelvic cavity. The profuse hemorrhage cooled the knife so that its operation was interfered with, and the same condition would have been present to a greater degree with the galvanic knife, and the incision by the scalpel would have been no less embarrassing. The necessity for removal of the placenta to arrest bleeding, as a further complication, and the rupture of the cyst previously to the operation, rendered the case as unfavorable as could well be. That the cyst had ruptured before the operation, and that this accident had been the cause of the peritoneal disturbance, seemed conclusively proven by the fact that no pressure was made upon the mass before the puncture that could have ruptured it, and that, after the puncture, the whole finger was passed into the cavity, the fetus was nowhere within reach, although the upper wall of the original cavity was below the level of the pelvic brim. The puncture, so far from rendering the cyst wall more liable to rupture, as suggested by Dr. Willard, would have relieved its tension, and brought the fetus nearer within reach. Whether the finding and delivery through the rent of a healthy four-months' fetus was necessary or merely a useless complication of the operation, I am not prepared to discuss; at the time I believed it necessary, and I was more thoroughly stimulated to the search by an expression of doubt on the part of a gentleman present as to the correctness of diagnosis.

In regard to the general merits of the vaginal puncture I am doubtful; and from the observations I have had personal opportunities of making, I rather incline to the feeling that, if I had another case which could be clearly made out before any alarming signs of peritoneal trouble had developed, or perhaps even afterwards, I should prefer abdominal section, in which everything can be exposed to clear view; and, tying and cutting the cord close to the placenta, I should be disposed to close up the abdominal cavity and let the placenta remain for absorption, as in the case of spontaneous fetal death. In all the cases which I have seen so far operated upon per vaginam, death has resulted; in one case, in the hands of a distinguished and skilful surgeon of this city, a dense and firm cyst-wall, as shown at the autopsy, gave no immunity from the same result —a fact which destroys any hope of benefit to be derived from waiting (as urged by my friend, Dr. Willard, with so much apparent force) until the cyst-wall should become firmer.

Electrolysis in the early months is certainly an admirable suggestion, and ought to be tried in every case discovered early enough for it to be feasible."

Dr. Parish mentioned that a recent case has been recorded in England, in which both mother and child were saved by gastrotomy. The placenta came away by suppuration.

Dr. Horace Williams suggested that the stethoscope might be used to ascertain the presence of the placenta before operating.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Reported by J. W. UNDERHILL, M.D., Secretary.

Stated Meeting, February 14, 1878.
The President, Dr. J. J. QUINN, *in the chair.*

EPITHELIOMA OF THE CERVIX IN A NEGRESS.

DR. THAD. A. REAMY presented a pathological specimen, consisting of the uterus and appendages, together with the kidneys, from a patient having the following condensed history:

"Mary S., quadroon, aged 28, married, no children. In December, 1876, she was found to be suffering from epithelioma of the cervix in an advanced stage, attended with the usual symptoms. At this time the growth was removed by means of the curette and cutting-gouge forceps, and the raw surface treated with a solution of bromine in alcohol, 1 to 14. Recovery was good. Her health and strength returned in good measure, and she increased in weight. In three months, however, the symptoms again declared themselves, and the removal by scraping was again effected, with results similar to the first operation. In November, 1877, the urgent symptoms made it necessary for her to be removed to the hospital, where a third operation was performed. This, however, effected but little, as the cervix was now all gone, both the vesical and rectal portions of the vagina invaded, and the uterus fixed. She lingered for six weeks after the operation.

Post-mortem examination, six hours after death; body emaciated; rigor mortis not marked.

Peritoneum thickened and highly injected in many places, particularly over the base of the bladder. Inflammatory adhesions in various places. The membrane dotted in many places with small, flattened, cheesy masses of grayish-white tuberculous material. The substance of the liver and pancreas infiltrated with the same product. The lungs filled with miliary tubercles. The right kidney normal, but its ureter enormously distended with urine. The left kidney enlarged, softened, and tuberculous in character. The ovaries, Fallopian tubes, and body of the uterus perfectly healthy. The cervix entirely gone, also the mucous membrane from the upper half of the vagina. The bladder walls much thickened, and the internal surface ulcerated. Rectum healthy."

Dr. Palmer remarked: "The occurrence of malignant disease in the negro race is acknowledged by those who have had abundant opportunity for observation in both races, as Sims and Nott, to be comparatively rare. I have had but two cases in colored, one in the Cincinnati Hospital, the other presented herself at my clinic at the college this winter. In both instances the disease was scirrhus. But in Dr. Reamy's case the white blood preponderated, and the case would really come under the general rule.

The operation of removing by curette, scoop, or scissors, or galvano-caustic wire, as much as possible, as far as safe, of the diseased growth is not only warrantable, but is a matter of duty. Without expecting to cure our patient, we do this to abate the symptoms of pain, hemorrhage, and fetor, and arrest the systemic intoxication. Life, I believe, may thus be greatly prolonged, and certainly be made far more comfortable. This operation I always perform as soon as consent is granted, and as early as possible.

I have recently been much pleased with the effect of chromic acid as a caustic in these cases, applied to the base of tissues after the above operation. It is a powerful caustic (oxidizer), slowly and deeply operating, as a rule not painful, and quite controllable. In these last particulars it is superior to bromine, though perhaps inferior as an agent to destroy the surrounding cancer cells. Bromine, no doubt, exercises an influence beyond its caustic powers, in penetrating and pervading the surrounding tissues infiltrated with the cancer cells. I have used the chromic acid in these cases recently—applied pure, with sufficient water only to render it fluid, protecting the surrounding parts with packing of cotton."

Dr. Reamy.—"The infiltration which remains after removal of the neck is never absorbed. If a single cell remains, the disease will advance, and, as has been remarked, the great trouble is that infiltration has already taken place when surgical assistance is called. As to invasion of the bladder, there can be no question in this case to any one who will examine the specimen. You observe the bladder wall, inferiorly, is hardened and thickened, and on its vesical surface the mucous membrane is eaten out and excavated. A point of interest in this case is that the body of the uterus is normal and healthy. The first time I operated upon this case I did not remove the posterior portion of the cervix, and already infiltration could be felt in the vesico-vaginal partition, which could not be removed.

It has been stated by gynecologists, and especially by Thomas, that there is a strong tendency for diseases affecting the cervix to spread no further than the internal os. It has been my experience, in cancer especially, that this disease, following this law of uterine pathology, after attacking the neck, invades the upper regions of the vagina, and occasionally, as in this case, the bladder, leaving, however, the urethra intact.

Now a word as to the conduct of the disease. Epithelioma of the cervix seems to be more frequently met with than formerly, or else, if not more common, improved pathology furnishes means for an earlier recognition of it. I shall not pretend to settle the question of the origin of this disease. I have frequently expressed in my lectures my conviction of its local origin, often from a traumatic cause. This is a disease of married life. But one case in fifty that I have seen has been in a virgin. The cervix uteri and the breast are parts particularly subject, in women, to external influence. The breast is injured by lacing; the cervix may be lacerated during parturition, or may be abraded by violent and excessive marital intercourse. I have not time to give scientific but clinical grounds for the opinion of local origin. There may be a predisposition to perverted growth, which a local influence may kindle into activity. It is said by writers on insanity that when a man becomes 'peculiar,' he surely becomes insane under certain influences. So probably with cancer."

Dr. Miles.—"What part does heredity play?"

Dr. Reamy replied: "The law of heredity is not well marked. I have met with but two cases, where there was any history of cancer. Sir James Paget has been quoted as favoring the idea of local origin. He is not decided. Granting that the disease depends upon injury, the question is whether removal is judicious. The rule is for subjects of this disease to die. Statistics show that there is an average gain of 30 to 36 months of life, in cases where operative interference is used, over those where it is not. Even if it would appear that the disease returns in an aggravated form after removal, or life would be shortened, one would say: 'Give the woman the boon which an operation confers—relief from pain, cessation of hemorrhages, and fetid discharges.' I have operated upon but one case where the operation seemed to be followed by no relief of the distressing symptoms.

Another question as to the propriety of operating. I have no doubt, if the disease could be removed at the beginning, and while infiltration is superficial, we could save a large proportion of our cases. The disease generally begins at the margin of the os in the cervical canal, and at this stage removal of the entire neck ought to be successful. We all know, though, that we do not see these cases soon enough.

An interesting complication of this case is the tuberculous state of the abdominal organs. The patient has never shown any of the evidences of tuberculosis, and it was only at the post-mortem examination that this condition became manifest.

It would be interesting to know the direct relation of tubercle to cancer. It has been stated by Paget and confirmed by Virchow that the removal of cysts of the mammary glands has been followed by tuberculosis of the subjacent lung. It may be possible that surgical interference may excite the lymphatic system and furnish influences which would lead to an outbreak of the same disease in a modified form in distant organs. Tubercle is a growth of connective tissue; the padding of the body, and the tendency which causes epithelial proliferation at one point might lead to connective tissue proliferation in another.

We had here, on the one hand, cancer; on the other, surgeons, and traumatic influences. The blood from the site of the operation filtered through the liver and this organ was full of tuberculous nodules. The deposits upon the peritoneum were likely the results of inflammation. It is held by some authors that a cancerous dyscrasia in one generation is followed by a tuberculous taint in another. If this be true, we might here have a remarkable confirmation of it, not in two generations, but in one and the same person."

Dr. Palmer, concluding the discussion, said:

"Dr. Reamy refers to the fact that cancer of the cervix rarely creeps up into the corpus uteri, but quickly involves the vaginal walls. He refers to another limitation of disease to the cervix—inflammation, the corpus remaining after months or years exempt. I think the freedom with which the vaginal vault is attacked in malignant disease of the cervix, is easy of explanation. It is anatomical. The route to the cellular tissue joining cervix and bladder or rectum is shorter than to the body of the womb, the disease commencing in the mucous membrane of the infra-vaginal neck. This cellular tissue once reached, a soil is touched most fertile for its rapid growth and spread. Here an innumerable number of blood-vessels and lymphatics communicate with all surrounding parts.

The idea that trauma is the exciting cause of development of cancer is a very old one. To it, however, my impression is, we can trace very few cancers indeed.

But Breisky, of Prague, thinks that there may be a direct relation between laceration of the cervix with eversion, through constant irritation, and carcinoma of the uterus.

One thing appears quite certain, viz.: chronic inflammation of the cervix does not lead to cancerous degeneration. Of all the patients whom I have treated for cervical inflammation, mucous or parenchymatous, I have yet to hear of one who subsequently has had cancer of that part. Again, if I now remember correctly, in all the cases of cancer of uterus which have come under my observation, the disease was primary.

As to the hereditary factor in such cases, it can be shown that but a small per cent of all cases can show any direct hereditary transmission—that a much larger per cent can be traced back to some disease like phthisis, scrofula, or syphilis, especially the former. It would appear, then, that any inheritance which shows a vitiated constitution, a depraved blood state, a cachexia, indirectly predisposes to cancer."

WHICH FOOT SHOULD BE SEIZED IN PERFORMING VERSION?

DR. QUINN, having related a case of transverse presentation in which version was impossible by traction on the foot nearest to the pelvic brim and corresponding to the presenting shoulder, had succeeded easily when traction was made on the other foot instead.

DR. TRUSH.—"I would respectfully ask leave to make a few remarks in relation to the subject of podalic version in shoulder presentations. The first point I desire to notice is the management of a prolapsed arm. The essayist has stated that he returned the prolapsed upper extremity into the uterine cavity, and I am led to infer from the context to this declaration, that he regards reposition of the prolapsed arm as, in many cases at least, a necessary preparatory step to the operation of turning. Such being his views, I must beg leave to take issue with him. Not only is it unnecessary to return the prolapsed arm as a preparatory measure to podalic version, but, by securing the protruding arm, we obviate its subsequent, possibly difficult delivery. On this topic modern authorities are perfectly agreed; all holding that the prolapsed arm, if held up under the pubic arch, is not, in any way, an obstruction to the passage of the operator's hand, or to turning of the child.

The second point to be noticed concerns the topic of *choice of foot* in performing podalic version. The essayist remarked that, by mistake, he brought down the lower nearer foot, when he should have seized the upper, *i. e.*, the one opposite to the presenting shoulder. Dr. Reamy supports this view, and maintains, in addition, that traction upon the upper opposite foot greatly facilitates the turning process, by reason, chiefly, of the double motion, rotation upon both transverse and longitudinal axes, which it imparts to the fetus, being in this respect far superior to traction upon the lower foot, and superior even to traction upon both feet.

To this doctrine, again, I cannot subscribe; on the contrary, I hold that the lower foot, the one corresponding in name with the presenting shoulder, is, except, perhaps, in dorso-posterior positions, the proper extremity to secure; and, further, that tractions upon both feet affords a degree of leverage power upon the body, not obtained through the single foot, either upper or lower. My reasons for these assertions are: first, that, as a rule, it is easier to secure the lower-nearer foot than the upper or opposite one—opposite to the presenting shoulder; secondly, that in turning the body of the child by this, the lower or nearer extremity, the movements of rotation are simplified, being reduced to a mere lateral displacement in opposite directions of the two poles of the fetal ovoid; that, hence, there is less liability to displacement of the arms and the danger of crossing of legs, the upper being brought down between the lower and the abdomen of the child, is avoided; so also anterior rotation of the abdominal surface of the child in dorso-anterior positions of the shoulder presentation—a position which, it is well known, presents itself much more frequently than the dorso-posterior. Thirdly, that, in the immense majority of cases, the version is readily effected by traction upon the lower foot, and in the few exceptional instances *both* extremities will have to be secured to accomplish the object. This leads me to notice, in conclusion, the point of relative efficiency of 'upper' foot, and of 'both' feet in the operation of turning. Of all questions in the whole range of operative obstetrics, none, I had thought, was more conclusively determined than that turning by '*both*' feet was the most efficient of all methods yet proposed for this purpose, and *the* method *per se* to be employed when others failed. I am free to confess that I doubt whether a single modern authority can be found that does not sustain this view. Certainly I am well aware that podalic version by both feet has been almost entirely abandoned in favor of the single-foot operation; not, however, because of inefficiency, but because of the better prognosis afforded the child in the subsequent extraction by the incomplete foot presentation. In regard to the question of *choice of foot*, I am not unmindful of the fact that a diversity of opinion exists among obstetric writers; but believe, however, that the weight of authority sustains the position I have taken, viz., that the lower or nearer foot should be chosen. Among others so deciding I may mention Braun, Schroeder, Hueter, Fritsch, Spiegelberg, etc."

Stated Meeting, March 14, 1878.
The President, DR. J. J. QUINN, *in the Chair.*

DR. MCMECHAN read a paper on

HYPERMASTIA AND POLYMASTIA; WITH REMARKS ON INFLAMMATION AND ABSCESS OF THE FEMALE BREAST.[1]

DR. PALMER remarked: "There is no disease which the physician is called upon to treat, that is so unsatisfactory as mammary inflammation. This is so, not because it is an unmanageable affection, but because of the officious intermeddling he is obliged to contend with.

The most important question which concerns us here is, how can we abridge mammary inflammation, how prevent suppuration?

The prophylactic treatment then is of the greatest value. As the inflammation arises from various causes, these are to be avoided or combated.

As a not infrequent cause is some ill-development of the nipple, and irritation and inflammation of the same, arising from the persistent and almost futile efforts of the child to draw the milk therefrom, it is well that attention before delivery and immediately after be directed here.

The various grades of inflammation of the nipple—as erythema, erosion, and fissure, are to be relieved by local application of tannin, zinc, lead, nitrate of silver, cleanliness, and the protection of the nipple with an appropriate shield. There is no question that inflammation of the gland proper, either in its cellular or glandular tissue, or both, may be but an extension from the nipple.

If the gland now is threatened in either tissue, the diet is to be regulated, moderate purgation of salines to be used, and the tartarized antimony, one-sixteenth grain every hour, administered. The breast is to be suspended. Application of warm camphorated oil is grateful. The practice of *rubbing* the breast with various applications with a view to soften the parts and empty the glands of milk, is to be deprecated as positively injurious—as it bruises the parts, and adds to the local irritation. If the inflammation by this treatment has not abated, I am in the habit of applying the belladonna, in the form of a plaster, made of soft chamois, circular in shape, with central perforation for the nipple, thickly spread with the alcoholic extract. Of course, this implies the taking of the child from the breast. Nor is the milk to be drawn out, or in any way to be interfered with. The gland is thus suspended, supported, and put at *rest*. The belladonna tends to relieve the pain, diminishes the milk secretion, and controls the congestion. I believe it is a potent means to prevent suppuration. I have never known the belladonna plaster to fail in arresting the milk when it becomes necessary to take the child from the breasts.

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[1] See ORIGINAL COMMUNICATIONS in this Number.

When suppuration is inevitable, poultice. Pus once well formed, make free exit with knife. Strapping is very useful for deep-seated abscesses and sinuses. Another very important factor in the production of mammary inflammation is some constitutional diathesis. The most common one is the scrofulous. The worst case I have ever witnessed, in which repeated abscesses formed, and which bled profusely when opened, well-nigh by long continued suppuration proving fatal, but which finally recovered—occurred in a patient with the hemorrhagic diathesis. In these cases, quinine, in full doses, is of great advantage in preventing and controlling suppuration."

Stated Meeting, April 11, 1878.
The President, Dr. J. J. Quinn, *in the Chair.*

Dr. Trush reported a case of

MORBID RETENTION OF PLACENTA AT TERM.[1]

Dr. Palmer remarked that there could be no doubt concerning the accuracy and reliability of Dr. Trush's statement, as to the retention of the placenta in this very remarkable case. If any doubt at all occurred in his mind, it was in reference to the possibility of the removal of the same. Was it possible, within the bounds of reasonable safety? Must confess that the doctor's first report did leave a lingering doubt that it could be removed; but the second, after repeated attempts and failures, and also in hands of another practitioner, faithfully carried out, had dissipated this.

He had seen placentæ retained from various causes—the inertia, hour-glass contraction, and adhesions, and had always succeeded in removing them entire. Removed one, several years ago, which had been retained forty-eight hours.

It was clear that the cause of retention in Dr. Trush's case was adhesion; the subsequent history tended also to prove this. Most probably, a chronic diseased condition of the endometrium was the cause of the placental adhesion. It looked most reasonable to accept the theory that the final disposal of the placenta was by the process of fatty degeneration, present in the uterus, *always* after parturition, and sometimes anticipated before, as well as in the placental tissue itself.

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[1] See July number, Clinical Cases.

The treatment was judicious—all, seemingly, that could be done, and the doctor is to be congratulated on his success.

Dr. Palmer read a paper on

TAPPING OF OVARIAN CYSTS,

an abstract of which is as follows:

"What are the results which, from our present stand-point, may be expected from tapping? To what extent do these warrant the continuance of the same?

He referred to the great variety of opinion expressed by authorities, viz.: Boinet, Kiwisch, Atlee, Spencer Wells, McDowell, Simpson, Nussbaum, Thomas, Peaslee, Hegar, Spiegelberg, Storer, and Stilling. Only two of these never tap; the remaining ten tap with varying frequency for diagnosis or treatment. Most regard the operation as attended with danger.

He endeavored to answer the above questions by reviewing the objects sought for in the operation, together with the results which may follow.

These are, 1st, *diagnosis of the tumor;* its nature, character of contents, number of cysts, attachments, etc. Of great importance in some cases, essential in a few. Increasing experience diminishes, however, this necessity.

2d. *Palliation.* In the vast majority of cases, although, perhaps, gratifying at first, is of short duration, and as a rule very unsatisfactory.

3d. *Cure.* This effect is most likely to follow tapping in (*a*) parovarian cysts; next in (*b*) unilocular cysts of the ovary proper; next in (*c*) paucilocular cysts; and last in (*d*) multilocular cysts. In the first, cure occurs as a rule; in the second and third varieties, it by far more frequently fails, and in the last, failure is certain.

What are the dangers of tapping?

1. *Hemorrhage.* A possible accident with best care, and whatever trocar. Fatal case occurred in hands of Peaslee; others reported by Spencer Wells and Kiwisch.

2. *Shock.*

3. *Inflammation of the peritoneum.* The greatest of all dangers, due in most instances to a passage of cyst-contents into the peritoneal cavity. Peritoneum exceedingly sensitive

to presence of foreign substances. The contents of multilocular cysts most injurious.

4. *Inflammation of cyst-wall.* The result of trauma, entrance of air into its cavity. Takes place more frequently than is supposed.

5. *Septicemia.* Stands second in the order of frequency among dangers.

6. *Rapid refilling* of the cyst, and consequent drain of the general system. Cysts, although unilocular, may refill with surprising rapidity, amounting to several gallons of fluid within a few weeks to few days. The drain is a source of no inconsiderable danger. A hectic, phthisis, amyloid degeneration of internal organs may follow.

Not a few cases in fair condition for ovariotomy, prior to or soon after a first tapping, have been permitted to become weaker and more exhausted under increasing drain, until a radical operation offers only a forlorn hope.

Mortality of tapping:

Simpson calculated it was not less than 1 in 6.

Dr. Fock's table of 132 cases showed 1 in 5½ cases, in from few hours to few days.

Kiwisch's analysis of 130 cases gives 17 per cent of death within a few days.

Southam 20 cases, 4 died within four hours and 3 within first month.

Meigs puts mortality at one-half.

T. S. Lee's table, 20 cases. 10 died within seven days and 2 within two weeks.

Peaslee thinks if statistics were made up from cases in hands of the general practitioner, no better results could be shown than in the tables of Fock and Lee. He concludes that the tapping of polycysts is attended by a mortality of at least 50 per cent.

The danger, as experience proves, *is not limited to polycysts.* Peaslee, a strong advocate for tapping of monocysts, states he has lost 4 such out of 63.

Other proof is abundant.

Aspiration does not diminish these dangers. In the hands of Peaslee, Hegar, Mundé, Lusk and others, very serious and fatal results have followed aspiration. Nor is the *hypodermic syringe* free from danger. These few cases already reported are undoubtedly but a small proportion of those repeatedly happening.

Conclusions.—In balancing the results for good and bad, it is not difficult to determine which outweighs. For remedial purposes, the ill effects of tapping so greatly preponderate, both in number and degree, that there is no doubt the number who have died within a few days after tapping is so far in excess of those cured by the operation, as to leave a very unfavorable showing for the latter.

Notwithstanding, however, the risk of the operation is heavy, and the ultimate permanent good promised is small, the urgency for immediate relief may be so great as to render it justifiable. Life may be held in extreme jeopardy from the dyspnea, pain, vomiting, and urinary suppression—the effect of pressure of a developing cyst. Unless relief is speedy, the patient dies; she is, however, too feeble to render ovariotomy at all advisable. Better tap for its immediate effect, in hope the patient may rally, and a future condition be more favorable for the removal of the cyst.

Aside from tapping in the very few such cases, it should be limited, with a view to remedial effects, for obvious reasons, to well defined *parovarian cysts.* Here the danger is at a minimum, the prospect of permanent benefit at a maximum. But in view of the fact that a vast majority of tappings even in *monocysts* prove unsuccessful as to cure, and may, regardless of the method of puncture employed, be fatal, the operation, save under the above rare exceptions and conditions, should be abandoned. And in view of the greatly increased danger of puncture of *polycysts*, the observance of this rule with them is more urgent, and should be more rigid.

For the purpose of diagnosis, the line of duty of the operator, from our present stand-point of facts, is equally clear and well defined. Is one justified in incurring the risk attending tapping for the sake of diagnosis? He must know, if he has acquainted himself with the literature of this subject, that he may bar himself the privilege of affording the only hope of his patient's recovery—ovariotomy. To endanger life, it may be unnecessarily, and deprive that life of the only chance for a restoration to health, is a fearful responsibility.

Past experience clearly should influence the surgeon to limit tapping, for the purpose of diagnosis, to the smallest number of cases, and then only under the circumstances of imperative necessity, by reason of special obscurity in diagnosis. If the diagnosis is reasonably clear and certain, tapping is unnecessary and unjustifiable. If practised by reason of doubt, and such a circumstance may render it permissible, it should be with the full understanding that on the first appearance of symptoms of mischief, the final operation is to be proceeded with. For this, previous preparation is to be made, that no delay is had. Peaslee offers this prudent advice. This is the only safe course of conduct with monocysts. With polycysts, however, it is hazardous to wait for the appearance of unfavorable symptoms. Since these symptoms occur in the majority of cases of first tappings of this variety of cysts, and according to statistics are followed by fatal termination in fifty per cent, there should be no delay. So soon as the character of the polycysts is determined by a withdrawal and examination of the fluid, and conduct of the cyst remaining, the whole tumor should be removed. The TWO OPERATIONS ARE ONE and at THE SAME TIME.

Ovariotomy has quite frequently been performed while co-existing inflammation of the peritoneum and cyst following tapping was progressing. While such conditions materially increase the mortality of the operation, they by no means render it hopeless. Successful cases have happened in the hands of Spencer Wells, Keith, Thomas, Peaslee, Emmett, and Goodell

In conclusion, the life of not a few suffering women, hopelessly doomed save for ovariotomy, is best promoted by limiting tapping to a *minimum*, and then only for the strongest reasons."

DR. PALMER concluded by saying that his mind had been directed to this subject within the last year by some unpleasant, though not fatal experience. The conclusions he had arrived at, were the result of not a little study and reflection, and were based upon the statistics of the subject.

While some of the precautions urged might seem unnecessary, certainly they were on the side of prudence. Here we cannot be too careful not to do harm. Not an uncommon error the practitioner falls into, is being persuaded by the patient or friends to tap, to ward off the final result or radical removal; and this, too, without any special reasons for tapping, either for diagnosis or urgency of symptoms, knowing full well that, at best, the result is only temporary, and that ovariotomy must come sooner or later. Such an error is not only a serious, but may be, as stated, a fatal mistake.

ABSTRACT OF THE TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.

THIRD ANNUAL MEETING,

Held in Philadelphia, September 25th, 26th, and 27th, 1878.

First Day—Morning Session.

The Society met, pursuant to adjournment, at the hall of the College of Physicians, at 10 o'clock A.M., September 25th, 1878.

The first Vice-President, Dr. William Goodell, of Philadelphia, called the meeting to order.

The following Fellows responded to the calling of the roll: Drs. Fordyce Barker, T. G. Thomas, T. A. Emmet, E. Noeggerath, and Paul F. Mundé, of New York; Drs. John Byrne, and H. J. Garrigues, of Brooklyn; A. D. Sinclair, W. L. Richardson, D. H. Storer, G. F. Lyman, and J. R. Chadwick, of Boston; Wm. Goodell, Ellwood Wilson, R. A. F. Penrose, and A. H. Smith, of Philadelphia; S. C. Busey and J. T. Johnson, of Washington; H. P. C. Wilson, W. H. Howard, of Baltimore; J. P. White, of Buffalo; W. H. Byford, of Chicago; J. C. Reeve, of Dayton, O.; H. F. Campbell, of Augusta; G. J. Engelmann, of St. Louis; and Gilman Kimball, of Lowell, Mass.

Dr. A. H. Smith, of Philadelphia, then made the address of welcome.

INVITED GUESTS.

The following gentlemen were proposed by the Council as invited guests: Drs. Griffith, Whiteley, and Erich, of Baltimore; Dr. Bartlett, of Milwaukee; Dr. A. Brandis, of New York; Drs. S. W. Gross, S. Weir Mitchell, Alfred Stillé, Alfred Fricke, Nathan Hatfield, Sr., John Packard, J. Forsyth Meigs, Harlow, D. Hayes Agnew, R. A. Cleemann, W. F. Jenks, G. B. Wood, W. H. H. Githens, T. S. Kirkbride, H. H. Smith, and S. W. S. Ruschenberger, of Philadelphia; Drs. Wm. Corson and H. Corson, of Norristown; and Dr. W. C. B. Fifield, of Boston.

The first paper was read by Dr. J. C. Reeve, of Dayton, Ohio, entitled

A CASE OF RUPTURE OF THE PERINEUM WITHOUT IMPLICATION OF THE VULVA.

The case was reported as one which was interesting in the following particulars: 1. The great rarity of this form of accident. Dr. Reeve had been able to find only two cases on record in which the child had been delivered by the rectum and the vulva left entire.

2. The great rarity of this common variety of central rupture of the perineum in multiparæ.

Dr. Reeve had succeeded in collecting thirty-five cases in which this accident had taken place in the primiparous, while he had not been able to find a single fair case occurring in the multiparous.

The case was also interesting as bearing upon one of the conditions alleged to favor rupture of the perineum. Dr. Reeve believed that no one cause could give rise to the accident. It had been held, however, that too great laxity of the perineum was a condition especially favorable to central rupture. If that were so, we should find it present in multiparæ in a fair proportion of cases.

3. The case was interesting in a medico-legal aspect.

The paper being open for discussion, **Dr. H. F. Campbell**, of Georgia, remarked, with reference to the propriety of immediate operation for lacerated perineum, that it had been his practice to perform it as soon as possible after the occurrence of the accident. In his experience, when he had performed the operation early, it had been successful, whereas in those cases in which it had been postponed for some time it had failed. The lochia, the passage of the water, and the use of injections during the puerperal period, which had been thought by some to interfere with plastic operations about the vagina, had not seemed to interfere with the healing process in the cases which had fallen under his care.

Dr. James P. White, of Buffalo, remarked that he had seen two deliveries through the rectum without marked laceration of the perineum. He then gave his method of treatment in cases in which laceration was threatened. It consisted in making triangular division of the tissue, the incisions diverging from roof of the perineum. He believed that division of the perineum with the knife for the purpose of preventing laceration should be resorted to much more frequently than it is. He regarded prevention of laceration of the perineum as a practical point, which should be impressed upon the minds of the younger members of the profession, inasmuch as it could be so easily accomplished by proper incisions. Brief reference was made to the histories of two cases in which such division of the perineum was made, and the parts healed without leaving any notable deformity.

ON THE SURGICAL TREATMENT OF DYSMENORRHEA.

Dr. J. Marion Sims sent a paper upon the above subject, which was read in abstract by the Secretary. It was fully illustrated, and embraced a minute description of the *bilateral* incision, or Simpson's method of treating stenosis of the cervix uteri, and the *antero-posterior* incision, or Sims' method. Dr. Sims regarded the operations as entirely different from each other, and applicable to entirely different classes of cases.

Simpson's operation was suitable only for cases of stenosis of the intravaginal portion of a *symmetrically* developed cervix, while Sims' operation was suitable for cases of *unequally* developed intravaginal portion of the cervix uteri, and where the posterior segment was two or three times larger than the anterior and associated with anteflexion.

A considerable portion of the paper was devoted to the description of instruments, and to the history of the two operations.

The paper concluded with a summary of the steps by which the operation, in its present form, was perfected.

All the operations upon the cervix uteri which Dr. Sims had performed within the last twelve months had been done under the antiseptic method, and he believed that method should be adopted in all gynecological operations.

Dr. Sims' paper being open for discussion, DR. FORDYCE BARKER, of New York, remarked that, while no one would deny the great value of the contributions which Simpson and Sims had made to uterine surgery, it must be confessed that we had not yet arrived at those settled and established rules of practice which had been attained in other departments of surgery. There was still a great diversity of opinion among men of eminence in gynecology, with reference to the etiology of stenosis of the cervix, its comparative frequency and importance in seriously affecting the health and happiness of those in whom that condition existed, and the necessity for and the kind of surgical procedure best adapted to secure safely the removal of that condition and its attendant consequences.

For many reasons, he wished that the paper would lead to a calm and judicious view of the subject, without bias of personal enthusiasm or personal prejudice. In discussing the paper, Dr. Barker regarded it as pertinent to inquire as to the comparative frequency and importance of the condition which the operations were supposed to remove.

How did it happen that one man believed that in twenty years he had found nearly one thousand cases in which the cervix required incision, that another had met with three hundred and eighty cases, etc., while others whose sphere of gynecological observation had been equally large, both in hospital and in private practice, men who fully believed in the propriety and utility of the operation when stenosis of the cervix existed, had not found occasion to perform it in one-fifth that number of instances? Was it possible that the latter class had, in many instances, failed to discern the existence of the condition which rendered the operation proposed necessary? Was the diagnosis of the condition so difficult and obscure?

The true answer was to be found in a difference of opinion as to the necessity and utility of the operation. The conviction was very strong in the minds of many of our most experienced observers that the operation had been performed in a great many cases unnecessarily and oftentimes injuriously. The truth was, that in the most skilled hands the operation was attended with some risks, not only the failure in improving the health and condition of the patient, but absolute danger to life. In New York City alone, there had been sixteen deaths from the operation which had never been published, and it was probable that many other deaths had resulted from the operation in other parts of the country and in Europe.

It was but just to say, however, with reference to the fatal cases published, that the causes had been given, showing that death arose from accidents or errors, which greater care and experience might have averted. But suppose that in the progress of our art the fatality of these operations might be wholly prevented, still Dr. Barker's point was good, and the paper demonstrated that the larger the experience the greater the caution of the operator. Admitting that stenosis of the cervix should be cured, no matter what may have caused it, the question was, whether the physical configuration of the cervix, described by the author of the paper, necessarily and always caused dysmenorrhea, sterility, or other symptoms which justified an operation of some severity, and one which was attended with some danger. That question could not be answered by reasoning alone, but it would be greatly cleared up by the accumulated experience of the profession. At the present day, some of the most distinguished gynecologists would unhesitatingly answer the question in the affirmative; while, on the other hand, many whose skill as operators was universally conceded, were operating very much less frequently than they did in former times, and only when there were positive symptoms which they felt well assured would be relieved by the operation.

All would gratefully concede that no one had done so much for surgical gynecology as the author of the paper, and therefore it was the more important that his doctrines and practice should be thoroughly scrutinized, for the tendency of the profession always had been and always would be to accept the dictum of such a man unquestioned.

Dr. Ellwood Wilson, of Philadelphia, remarked that he was not an advocate of either operation, and yet he did not deny the possibility of the existence of cases in which it might be necessary to perform them. His impression, however, was that they had been performed much more frequently than was justifiable. He thought that the results of the operation by incision were not equal to those which could be obtained by forcible dilatation. The treatment by forcible dilatation was the method which he favored, was one which in his experience had not been followed by unfavorable results, neither had he been obliged to keep the patient in bed more than twenty-four hours after its performance. The after-treatment to which he resorted consisted in the use of tepid soap-water injections. As far as he had been able to trace the history of his cases, the results of treatment by dilatation had been permanent.

Dr. Noeggerath, of New York, in discussing the question, referred to the views held by the late Dr. Peaslee. Dr. Peaslee had given two objections to the operation as it was performed. In cases of anteflexion of the second degree—for an operation attended by so much danger could scarcely be justifiable in cases of anteflexion of the first degree—one of the objects of the operation was to straighten the cervical canal. If, then, the operation was performed in the way proposed, the canal was not straightened, because, in order to straighten it by an incision, it would be necessary to cut far above the vaginal insertion, and therefore into the peritoneal cavity. That objection raised by Dr. Peaslee Dr. Noeggerath regarded as still good. The second objection was that a cut, made in the manner proposed, entered the parenchyma of the organ, and rendered the patient very liable to the occurrence of serious inflammations, such as phlebitis and lymphangitis. Dr. Peaslee therefore contended that the incisions should be only sufficiently deep to give to the canal its normal size. Reference was then made to the instrument which Dr. Peaslee had devised for cutting through the mucous membrane without involving the parenchymatous structure, and Dr. Noeggerath was of the opinion that Dr. Peaslee's operation had accomplished all that could be claimed for the operation as described by Dr. Sims. Further, with reference to the results of the operation by incision, one thing was to be taken into consideration; namely, that we learned only of the condition of the patient at the end of two, three, or four months after its performance. Now, what was the result? The cases were effectually cured for two or three months, but after eight or ten months they were in the same condition as before the operation was performed. The same was true of dilatation, and so long as we did not obtain full and true reports of the condition of the patients at the end of one or two years after treatment, discussion of the subject might be continued for an indefinite length of time without arriving at reliable conclusions. When by careful operation we had obtained the results at the end of one, two, or three years after any operation had been performed, whether it was dilatation or incision, we might begin to learn something of results upon which dependence could be placed. He believed, however, that the cutting operation for the relief of dysmenorrhea and sterility was no longer performed to such an extent as it had been formerly; and that the tendency was to supplant the surgical operation by other methods of treatment which were less dangerous and equally successful.

Dr. Wilson, of Philadelphia, stated that he had followed the histories of several cases of dysmenorrhea treated by dilatation, and at the end of twelve or fifteen months they had remained perfectly cured, and in some cases six or seven years. In one instance he had had the patient under observation until she had passed through the process of parturition.

Dr. H. P. C. Wilson, of Baltimore, remarked that it was doubtless true, that the operation of incision of the cervix uteri for the cure of dysmenorrhea and sterility had been performed many times when it should not have been performed. The same thing, however, might be said with reference to all new operations. But he believed there were many cases of stenosis of the internal os associated with anteflexion, in which no other measure was adequate to rectify the condition, except division of the cervix. Although he had operated upon many patients upon whom he would not at the present time operate, nevertheless he was in favor of the cutting operation, and thought it should not receive the condemnation which had been extended to it, at least by inference, by all the speakers who had preceded him. For example, in a case in which the uterus was bent upon itself in a marked degree, it could be dilated sufficiently to permit of the passage of the finger, and still the stenosis would return in a large majority of cases. In such cases division of the elongated posterior lip accomplished what dilatation could not accomplish, and the results obtained were more permanent. He had performed the cutting operation in nearly one hundred cases, and with only two deaths. In both of those cases the fatal results were readily explained. For example, in one there had been several attacks of general peritonitis prior to the performance of the operation—a fact unknown to the doctor at the time he operated. He had not had any cases of serious hemorrhage, and had had more cases of pelvic cellulitis following the application of iodine to the cavity of the uterus, and the use of sponge tents, than from the cutting operation. He was, therefore, prepared to believe that, if the cases were carefully selected with reference to the remains of cellulitis and peritonitis —for in those cases there was always danger—the operation could be performed with satisfactory results. He feared that the debate had leaned too far towards ostracizing the operation.

Dr G H. Lyman, of Boston, remarked that he had performed the cutting operation several times, and while he had not had any fatal cases, he had not had any great success in curing his patients. He had not performed the operation for some length of time, because at the end of six months he had found his patients in about the same condition as before its performance, and also because he had not had as good results as from dilatation. There was much to be said regarding the pathology of the condition which was present in the class of cases under discussion, and for the purpose of obtaining information in that direction he hoped the president would call upon Dr. Emmet, of New York.

Dr. Emmet directed the attention of the Society to one special point in connection with the subject under consideration. His observation had taught him that when the flexion was above the vaginal junction, there was present a condition which was expressive of trouble elsewhere. In that class of cases, there was present more or less thickening of the broad ligaments, and the condition of the uterus indicated that the disease was outside of that organ. When the operation had been performed in such cases, he had never known the woman to be permanently relieved. Fortunately the cellulitis in a large number of these cases was not lighted up by incising the cervix, consequently the bad effects did not always follow the operation, but no permanent good followed it. Every case should be examined carefully through the rectum, for the purpose of determining whether or not any thickening of the broad ligaments was present. Such thickening gave rise to obstruction of the circulation, and was the cause of a chordee of the uterus which after a time became permanent. In the beginning, the fault did not rest in the uterus, nor was the condition of the uterus in such cases ever relieved by the operation. Dr. Emmet believed that mechanical dysmenorrhea, as a rule, was a myth, because it almost always depended upon some defect in nutrition apart from the uterus. He regarded it as very important to say how far the above condition was due to old attacks of cellulitis, and if it could be traced to these, the operation would pass out of the way entirely.

A CASE OF EXTRAUTERINE PREGNANCY WITH THE DISCHARGE OF THE FETAL BONES THROUGH THE BLADDER.

Dr. James P. White, of Buffalo, reported a case of the above character, and accompanied the report with some remarks.

A detailed history of the case was given, and the bones exhibited. Diagnosis of pelvic hematocele was first made, and an opening made in the roof of the vagina to give escape to the blood, but instead of blood, a few ounces of a clear straw-colored fluid were obtained. Peritonitis followed, and came near causing the death of the woman. When, however, the inflammation had subsided, and the abdomen became retracted, the tumor was scarcely perceptible. After a time the woman discovered that her urine escaped through an opening in the vaginal wall. A successful operation for vesico-vaginal fistula was performed. Some time after, she was seized with severe vesical tenesmus, and her attending physician, Dr. Rogers, of Dunkirk, removed a bone which proved to be a fetal rib. The case was regarded as interesting with reference to the following points:

1. The location of the fetal tumor was one rarely assumed in cases of extrauterine pregnancy; namely, in front of the uterus and top of the bladder.

2. The discharge of the fetal remains through the bladder was one of the most infrequent of the various methods by which they might be disposed of by spontaneous elimination. Dr. White believed the case confirmed the opinion already expressed by Parry, that it was better to leave such cases to the spontaneous action of nature rather than to open the abdominal wall for the removal of the fetus. He then raised the question, Was it not better in most cases in which an operation could not be performed through the vagina, to leave the termination to nature rather than make the abdominal incision for the removal of the fetus?

Dr. John L. Atlee, of Lancaster, was invited to open the discussion, and related the history of a case in which his son, Dr. Walter F. Atlee, felt himself justified in deviating from the conclusion reached by Dr. Parry, and had performed a successful operation for the removal of a fetus in extrauterine pregnancy.

The child weighed 4½ pounds, and, when the abdominal cavity was opened, presented itself lying directly across the abdominal cavity, with the head to the right side of the mother. The child was readily removed, and the placenta permitted to remain undisturbed, except to bring a portion of it out at the lower angle of the wound. The wound was closed in a manner similar to that adopted after ovariotomy, and the woman recovered without a bad symptom.

Dr. Atlee thought, if removal of the placenta had heretofore constituted one of the chief dangers of the operation, that, if it was allowed to remain undisturbed, the operation might become as popular as the operation of ovariotomy was at the present time.

Dr. Storer, of Boston, related the history of a case of extra-uterine pregnancy which occurred in his practice nearly twenty years ago. The tumor was well marked, but there were no symptoms which suggested interference. A short time only elapsed before a fetid discharge appeared from the rectum, and it was found that a small bone was protruding. It was removed, and in the course of three months all the bones of the fetus passed off. The patient made a good recovery, and had since had two children. Dr. Storer mentioned the case as one which illustrated the non-necessity of surgical influence.

Dr. White remarked that he did not wish to be understood as saying that no operative interference should be instituted, but he simply wished to state it as his opinion that it was better to leave the case to nature, and resort to an operation only when she indicated interference. With reference to leaving the placenta, he believed it was well established that it should be left undisturbed. In the three cases which Dr. Thomas, of New York, had reported, the placenta was allowed to remain, and the results favored the adoption of such a method of management.

Dr. Campbell, of Georgia, made brief reference to a case which seemed to substantiate the view that the proper method of management was to leave this class of cases to nature's method of removal.

The Society then adjourned to meet at 3 P.M.

First Day—Afternoon Session.

The Society was called to order at 3 P.M., by the first Vice-President, Dr. Goodell.

MEMBERS BY INVITATION.

The Council reported the names of the following gentlemen as members by invitation: Drs. A. T. P. Garnet, of Washington; Isaac Price, of Westchester, Pa.; W. H. Baker, of Boston; Isaac Ray, of Philadelphia; and R. S. Sutton, of Pittsburgh, Pa.

The first paper was read by **Dr. J. T. Johnson**, of Washington, entitled

A CASE OF FOOT AND HEAD PRESENTATION; FRACTURE OF THE SPINE IN UTERO.

The case was one in which, on account of the severity of the labor pains, it was found impossible to crowd the head up and resolve it into a footling presentation. The child was finally delivered by the forceps, the father objecting to the operation of craniotomy. It was literally squeezed to death by the uterine forces, and after delivery was effected, it was found that there was fracture of the spine at the lower third of the dorsal region. The vertex and one of the lower extremities became firmly wedged in the pelvic cavity and had made no advance whatever during the last hour of labor. The maternal parts were becoming hot and dry, and the pains were so severe that there was danger of rupture of the uterus. It therefore seemed to the doctor that the only safety for the mother was in a speedy delivery.

The golden opportunity for version was consumed in search of counsel and anesthetics, and when Dr. Johnson arrived, the only resort was to the instrumental delivery practised. The case was reported with special reference to treatment, and although discussion of the forceps operation was out of place in that connection, yet Dr. Johnson thought great good might be done if the Society would give authority to the statement, that the forceps operation should be regarded as a means of preventing danger to the mother from puerperal diseases, as well as a means of rescuing her when in danger in childbirth.

In the discussion, Dr. Engelmann, of St. Louis referred to a case in which there was fracture of a large number of the bones of the child while in utero, and many of the fractures also had united before birth. The cause of the fractures was unknown, as there was no injury to the mother while carrying her child. A humerus and several of the ribs had evidently been fractured, and union had taken place with a well-defined callous.

Dr. Noeggerath, of New York, mentioned a case similar to that reported by Dr. Engelmann, but in his case the explanation of the fractures seemed evident. The child was born with fracture of a humerus and of a femur. The delivery was natural. The same child, before it was five years of age, had 32 fractures. She lived, however, to the age of 30 years, when she was delivered by Cesarean section on account of an antero-posterior contraction of the pelvis to $\frac{1}{4}$ of an inch in diameter It was, therefore, an extreme case of rachitic softening of the bones

Dr. Penrose, of Philadelphia, referred to a case of placenta previa in which the child was in exactly the same position as in Dr. Johnson's case. The woman was dying rapidly, and the question was how to effect the most rapid delivery. A fillet was attached to the ankle of the presenting extremity, and while an assistant pulled upon it, as nearly as possible downward and backward, Dr. Penrose pushed upward and succeeded in rotating the child in the cavity of the uterus, so that within ten minutes delivery of the woman was completed. Efforts at ordinary version failed to accomplish anything at all, and the delivery was effected in the manner described.

Dr. Campbell referred to two cases in which there had evidently been fracture of a rib in utero.

Dr. Johnson remarked that he made about the same effort to accomplish delivery in his case as was made by Dr. Penrose, but he found it to be impossible to change the position of the child because of the extreme restlessness of the mother, and the severity of the uterine contractions, whereas in the case related by Dr. Penrose it was possible that it might be more readily accomplished, on account of the weakness of the patient from loss of blood.

THE NECESSITY FOR EARLY DELIVERY AS DEMONSTRATED BY THE ANALYSIS OF ONE HUNDRED AND SIXTY-ONE CASES OF VESICO-VAGINAL FISTULA,

was the title of a paper read by DR. T. ADDIS EMMET, of New York.

The object of Dr. Emmet's paper was to prove that instrumental delivery had rarely, if ever, any agency in the production of vesico-vaginal fistula. The direct cause was always delay in delivery after impaction of the fetal head had taken place, while the indirect one was in a large proportion of cases neglect to empty the bladder.

The extent of the injury did not necessarily bear any relation to the length of the labor, but generally depended upon the mode of delivery. That assertion rested upon the supposition that we could determine the average amount of damage by the length of time necessary to repair it afterwards.

Dr. Emmet illustrated his position by a table containing an analysis of 161 cases of vesico-vaginal fistula. The analysis showed that the duration of treatment was considerably more in those instances in which the accident had occurred in connection with natural than with instrumental delivery.

The paper had an important medico-legal bearing. For it was often thought that because the woman, soon after delivery by forceps, was unable to control her urine, the blame should be attached to the operator. Dr. Emmet, however, did not hesitate to make the statement that he had never seen a case of vesico-vaginal fistula which could be shown to have been made by instrumental delivery. The fact that urine escaped from the woman as soon as delivery had been effected by the forceps was not, by any means, conclusive evidence that the mother had been injured by the instruments.

The neglect to empty the bladder in cases of instrumental delivery was quite as common abroad as at home, for a goodly proportion of the cases of vesico-vaginal fistula which fell under his observation came from abroad. It was impossible to ignore the consequences of neglect in this direction, and the conclusion was reached that there could be but one safe course to adopt in cases of instrumental labor, and that was to introduce the catheter without regard to the statement of the patient that she had passed water freely.

The paper being open for discussion, DR. A. H. SMITH, of Philadelphia, remarked that the results set forth by Dr. Emmet were very satisfactory to those who were in the habit of teaching that the forceps should be used early in certain cases of labor. The old teaching, which required that the patient should be twenty-four hours in labor before the physician was warranted in applying the forceps, had to a very great extent been supplanted, and he had no doubt that in consequence the number of cases of vesico-vaginal fistula had been very much reduced. Dr. Emmet in his statement, that there was no evidence that the forceps ever produced vesico-vaginal fistula, gave encouragement to the early use of the instrument. It was not intended for a moment, however, to encourage the use of the instrument by the ignorant practitioner, but at the same time it relieved the early use of the forceps of a certain amount of odium. In confirmation of such view, Dr. Smith referred to the fact that in the Philadelphia Lying-in Charity, where between ten and eleven thousand cases of labor had been attended mostly by students of medicine, who had been instructed to use the forceps early, if there was any difficulty, there had occurred only a single case of vesico-vaginal fistula, and that could be readily explained by natural causes. Such results showed, as did Dr. Emmet's paper, that the danger to the tissues of the mother was not from the amount so much as from the duration of the pressure; that an immense amount of pressure could be brought to bear without danger of being followed by sloughing, provided the pressure was not too long continued. The danger to the soft parts of the mother was not when the head or other portions of the child were driven intermittingly against the tissues, but it was when they became impacted in the pelvis, and gave rise to continuous pressure. It was then that we were to interfere with instruments.

With reference to the introduction of the catheter before the use of the forceps, Dr. Smith called attention to one point, and that was, that when the head was impacted in the pelvis, it was better to apply the forceps and draw the head down a little, rather than resort to forcible introduction of the catheter before the instruments were applied. When the head was drawn down sufficiently far, the catheter could be introduced, the bladder evacuated, and the delivery completed. With reference to the immediate escape of urine after forceps delivery, Dr. Smith thought almost every one had seen such cases, and in many of them it doubtless came because of relief from pressure; the moment the pressure was removed from the natural passage for the urine, it flowed away.

Dr. D. H. Storer, of Boston, remarked that among the several thousand cases of midwifery which he had attended, there had occurred two cases of vesico-vaginal fistula. In the city from which he came, there was no man who used the forceps more seldom than he did. Doubtless the instrument was of great service, but the idea that it was an instrument which was constantly to be used was one which should be carefully considered. Until the head ceased to recede, or rather until impaction had occurred, should the forceps be used? There was no question but that certain accidents had attended the use of the obstetrical forceps, such as rupture of the perineum, etc., and while he coincided with Dr. Emmet in much to which he had directed attention in his paper, yet he believed we should be exceedingly careful, and point out the fact that injury was produced by their too frequent application.

Dr. Fordyce Barker believed he did not go too far in making the assertion that the statistical tables which Dr. Emmet had presented were among the most valuable which, of late years, had been brought before the profession. For, in the first place, they were made up by one who had studied the subject without preconceived views and opinions, and were the result of the study of the cases which had fallen under his observation. Although all the results were in exact accord with the most advanced obstetrical teaching of the present day, yet we had had nothing which so demonstrated that the teaching was wise and true, and for the interest of poor suffering woman.

In the first place, Dr. Barker referred to the influence of an over-distended bladder as a cause of retarded or protracted labor, and he felt well assured that it was an important cause. It was doubtless the observation of every experienced obstetrician who had been called in consultation, that by introducing the catheter, what had been regarded as a proper case for instrumental delivery, had been converted into an active labor, which terminated in a speedy delivery. Such results he had observed several times, and although obstetric works directed attention to the importance of watching the bladder during the process of parturition, yet there was nothing which was more commonly neglected. In fact, he should lay it down as a rule, never to take the statement of either the woman or the nurse, but always introduce the catheter before applying the forceps.

With reference to the propriety of forcing an introduction of the catheter, a point alluded to by Dr. Smith, his own practice had been, in cases in which neither the soft nor the solid catheter could be used without violence, to introduce the forceps and so bring the head down as to relieve the urethra from pressure, and then use the catheter before completing the delivery. There was no doubt but that an over-distended bladder increased the difficulty of delivery by instruments, and increased the shock and suffering of the patient. Incident to such overdistention, we often met with puerperal cystitis, and it might also give rise to inflammation of contiguous tissues, and develop pelvic cellulitis and pelvic peritonitis.

Dr. Barker alluded to another cause of prolonged first stage of labor, and that was exhausted nerve power and depressing *morale*. Under such circumstances, he regarded it as necessary either to give the patient rest by the use of opium or overcome uterine inertia by full doses of quinine administered at short intervals. The quinine did not operate as an oxytociclike ergot, but was effectual in restoring the nerve power that excited the physiological process of the labor.

Dr. Barker regarded it as one of the most cardinal facts which the paper demonstrated, that there was no evidence that the forceps, in the hands of the experienced obstetrician, had been the cause of vesico-vaginal fistula, but that such fistulæ had been produced by too long continued pressure of the fetal head against the soft parts of the mother. Contrary to the opinion of Dr. Storer, with whom he was always predisposed to agree, he believed that the dangers from the use of the obstetric forceps had been very much exaggerated. In his own experience, the older he grew, and the larger his sphere of observation became, the more frequently he found it necessary to resort to instrumental delivery by means of that instrument. He had not regretted their use in a single case, but, on the other hand, he could in many instances see his error in not applying them at an earlier stage in the labor and oftener than he had done.

Dr. R. A. F. Penrose, of Philadelphia, regarded the most important point in Dr. Emmet's paper to be his statement with reference to the exact time when the forceps should be applied, and that was immediately when the head ceased to recede after the occurrence of a pain. In that respect the time was definitely fixed, and was a most practical teaching. A delay of fifteen minutes at that time was dangerous, and the patient was placed in very great peril unless speedy delivery was effected.

Dr. Wilson, of Baltimore, regarded the paper by Dr. Emmet as one possessing incalculable value in a medico legal aspect. He agreed with him in every word he had said and also with the remarks made by Dr. Barker. The older he grew the more ready was he to resort to delivery by means of the forceps, and while he had never regretted their use, he had very often regretted that he had not earlier resorted to their aid. He would go a little farther than had been stated and resort to the forceps as soon as the head ceased to *advance*. He made it a rule to always carry with him to a case of labor a bottle of chloroform and a pair of forceps, for he regarded it as his duty to see that the woman was delivered with as little suffering and danger as possible. He had frequently used the forceps when he had felt absolutely certain that the woman would be safely delivered by nature. He also believed that the proper use of the forceps, while the patient was under the influence of an anesthetic, prevented laceration of the perineum.

Dr. Barker regarded it a very uncertain rule to resort to the use of the forceps when, in the interval of uterine pains, the head ceased to recede. For there were many labors in which it was found that in the intervals between the pains the head remained exactly as it was, and yet the labor went on normally. The recession of the head depended partly upon the position which it occupied in the pelvic cavity, and partly upon the condition of the soft parts of the mother. So, instead of saying that the forceps should be applied as soon as the head ceased to recede in the interval between pains, he would say that the instrument should be resorted to as soon as it was evident that the head had ceased to advance, while the uterine contractions were sufficiently powerful.

Dr. Penrose thought that Dr. Emmet and Dr. Barker meant the same thing, for when the fetal head ceased to recede, it almost invariably ceased to advance.

Dr. John L. Atlee, of Lancaster, coincided in the statement made by Drs. Wilson and Barker, and said that the older he grew the more apt he was to resort to the forceps. He then spoke of the use of ergot in the first stage of labor, and regarded it almost as constant a cause of vesico-vaginal fistula as any which had been recognized. In his private teaching, he made it a rule to prohibit the use of ergot in primiparous cases, and prefered to resort to the forceps when any difficulty arose. The histories of two cases were then related, which had a bearing upon the point stated.

With reference to the introduction of the catheter, he thought it was not so difficult an operation as might be supposed from what had already been said. He drew attention to one point, and that was, that the ordinary pocket case female catheter did not always suffice to reach the urine. Reference was then made to a case in which a long male catheter was introduced to the hilt before the bladder was emptied and the urine removed.

Dr. Storer thought it had been conceded by all of the gentlemen, that when the head ceased to advance the use of the forceps was proper. His view, however, was that they were oftentimes employed under improper circumstances, and that therefore the Society should be cautious in the expression of views which were especially to influence the younger members of the profession. With reference to the occurrence of lacerated perineum as frequently when forceps were not used as when they were used, as had been stated by Dr. Wilson, Dr. Storer remarked that in almost every case of that character which had fallen under his observation, the injury had been produced by the use of the forceps.

Dr. Wilson remarked, in explanation, it was probable that the bad use of the forceps caused laceration of the perineum, still he thought that if the instrument were properly used while the woman was under the influence of chloroform, they could prevent the occurrence of such laceration.

Dr. J. P. White remarked that during the last thirty years he had pursued the course recommended by Dr. Emmet, with reference to the use of the forceps. Many times he had regretted that he had not resorted to their use earlier, but he had yet to meet the case in which he regretted that he had resorted to their assistance. The tables presented by Dr. Emmet he regarded as a vindication of his own practice during the period of time mentioned. There was one point to which he wished to make special reference, and that was, concerning the use of ergot and the forceps. The ergot was something over which, when it acted, we had no control. It gave rise to uncertain power, which could not be controlled or directed; while the forceps was a power which was always under the direction and control of the obstetrician. With reference to the use of the forceps, his rule had been, that when the head ceased to advance with each repeated pain they should be employed; for by their application the suffering of the woman could be terminated, and the danger from laceration of the perineum and from exhaustion very much lessened.

Dr. A. H. Smith, to correct any misapprehension which might come from his remarks, stated that the simple fear of sloughing of the tissues, in the first stage of labor, should not make us feel the necessity of applying the forceps hastily, unless there was added to it some special indication. In other words, hastening the first stage of labor should not be regarded as an indication for the use of the forceps, unless it was accompanied by some more important consideration, which made it desirable. With reference to ergot, he regarded it as criminal to resort to it in the first stage of labor.

Dr. Emmet, in closing the discussion, remarked, with reference to the influence of an overdistended bladder, that it was a point of great importance, for, if the woman was delivered in that manner, nearly all the children were stillborn. He should use the forceps with the view of introducing the catheter, and thought it was far better to push the head back sufficiently to admit of its introduction than to pull it down for the same purpose. If that could not be done, he would resort to the use of the aspirator above the pubis, an operation which could be performed with comparatively trifling danger. Certainly it became a serious matter to attempt to deliver a woman with the forceps while the bladder was distended, if every risk was to be avoided with reference to the life of the child.

With reference to the point made by Dr. Barker, that the woman should be delivered as soon as the head of the child ceased to advance, Dr. Emmet thought the point was well taken, that delivery should be accomplished as soon as the head of the child ceased to recede in the interval of pains. He did not say that the woman should be left in labor until that time, but that it was the latest point at which it was safe to allow the woman to remain without artificial delivery. If the head ceased to recede, it was evidence that the tissues had lost their elasticity, and he thought Dr. Barker should put upon record his views with reference to the conditions under which the head ceased to recede, except when the elasticity of the tissues was lost.

Dr. Reeve remarked that he had used the aspirator under the circumstances alluded to, and that the results were such as to encourage him to resort to its use again.

Dr. Barker believed that every experienced obstetrician had seen cases of perfectly normal labor in which the head ceased to recede after the uterus ceased to contract, yet it was not true of all cases of ordinary labor. It might occur when there was special fullness of the soft parts of the woman, such as came from the presence of a large amount of adipose tissue; and also when the head was rotated anteriorly at an early instead of a late period in labor; in the antero-posterior position it almost never took place.

Dr. Goodell mentioned, with reference to the use of the catheter, that he agreed with Dr. Barker and Dr. Smith in their statements, and thought the head should first be moved by the forceps, and then the catheter employed in cases in which it could not otherwise be readily introduced.

There was one point which he was not inclined to allow to go forth from the discussion without further comment, or at least without something more in the way of qualification. While he disliked to disagree with Dr. Barker and Dr. Smith, he was inclined to agree with Dr. Storer with reference to the frequent use of the obstetric forceps. The skilled operator could use the instrument without reference to special rules; indeed, he required little or no direction according to rule in its use, but it was not so with the inexperienced. One great reason why Dr. Smith was able to report such gratifying results from the use of the forceps, in the Philadelphia Lying-in Charity, was because the young men had been taught to send for assistance early in cases of difficult labor; and instrumental delivery, if it became necessary, was conducted by skilled hands, without injury to either mother or child. It was well known that the perineum especially, and not infrequently the cervix uteri, were ruptured in consequence of the use of the forceps by those who were inexperienced in that instrumental operation. Dr. White doubtless saved the perineum by the use of the forceps; Dr. Barker did the same, and so did Dr. Smith; but Dr. Goodell was very certain that an inexperienced man would produce laceration in very many of the same cases in which those gentlemen were able to prevent it Dr. Goodell therefore feared that the teachings of the discussion, unless somewhat qualified, might do harm. In teaching, his rule had been to direct the student to remove the forceps as soon as the perineum was reached.

With reference to laceration of the cervix, such a result was not necessarily an attendant upon the use of the forceps, but it was nevertheless true that the worst bilateral lacerations of the os which had fallen under his observation were produced by the use of instruments, and he thought Dr. Emmet's experience would sustain him in that statement. While, therefore, the obstetric forceps was an instrument of exceeding great value, encouragement to its use should not pass unqualified.

The Secretary then made some announcements, and the Society adjourned, to meet on Thursday morning, at 10 A.M.

Second Day—Morning Session.

The Society was called to order at 10 A.M. by Dr Goodell.

The Secretary announced that the council had recommended the following gentlemen as

MEMBERS BY INVITATION:

Dr. E. L. Duer and Dr. W. B. Atkinson, of Philadelphia, and Dr. Nathan Bozeman, of New York.

The first paper was read by DR. H. P. C. WILSON, of Baltimore, on the use of

THE HAND AS A CURETTE IN POST-PARTUM HEMORRHAGE.

The paper consisted essentially in the relation of the history of a case in which severe post-partum hemorrhage occurred, and after a fair trial of all ordinary means with failure, it was arrested by introducing the hand into the cavity of the uterus, and using the finger nails as a curette to the surface from which the placenta had been removed.

Mrs. J., in her fourth labor, was delivered of a child weighing ten pounds. The labor was normal, and no necessity for interference existed, but at the earnest solicitation of the woman, small quantities of chloroform were administered from time to time, and pushed to destroying consciousness just before the birth of the child occurred. The uterus was grasped, and made to follow the child with the last pain, so as to secure expulsion of the placenta and guard against hemorrhage. The nurse held the firmly contracted uterus until the cord was tied and severed, when the doctor's hand took the place of that of the nurse, and he found that the uterus had again enlarged. The placenta was readily removed, and up to that point no visible hemorrhage had occurred; but within a few seconds blood poured from her in such quantity as to deluge the bed and run down upon the floor. The doctor called for ice, and at once passed his right hand into the cavity of the uterus, while he made firm pressure over the fundus of the organ with his left. The uterus responded promptly, and expelled his hand into the vagina. One drachm of Squibb's fluid extract of ergot was given, but within a few minutes the uterus enlarged under the doctor's hand, and another gush of blood came from the vagina. The right hand, containing a lump of ice, was at once carried into the cavity of the uterus, the clotted blood turned out, and the hand and ice retained until the uterus expelled them. The ice was left in the vagina, and drachm doses of Squibb's fluid extract of ergot given every five or ten minutes. Two drachms were given hypodermically, but no response was obtained from the uterus. The uterus expanded the third time, and the hand was the third time carried into the uterine cavity with the same results as above. The fourth time the uterus expanded, and the fourth time the hand with the ice was introduced to be expelled as before, and with no better results. Half an ounce of Squibb's fluid extract of ergot was then thrown into the rectum. One and one-half ounces of ergot had then been used without producing perceptible effect in stimulating tonic contractions of the uterus. The uterus was again evidently much larger than it ought to be; the ergot could not be pushed further on account of nausea. The patient's face was blanched, her sight dim, her pulse frequent and feeble, and Dr. Wilson was apprehensive of the result. The pros and cons of all the remedies for arresting obstinate and profuse uterine hemorrhage were revolved in his mind, such as the prompt arrest of hemorrhage from fungous granulations by the use of the curette, the raking of the surface of the placental attachment with the curette or finger-nail in cases of hemorrhage following abortion, the use of hot-water injections, injections of Churchill's iodine, and Monsel's solution, the faradic battery, compression of the abdominal aorta, etc. He resolved to pass the hand for the fifth time into the uterine cavity, and use the finger-nails as a curette, thoroughly raking the placental surface.

As the surface was raked, there were feeble expulsive efforts produced, but the raking was done very thoroughly before the hand was expelled into the vagina. Only a few seconds elapsed, however, before relaxation of the cervix again allowed the hand to enter the uterus and give the placental surface a second raking. Notwithstanding this state of atony, the patient did not lose a teaspoonful of blood after the first raking of the placental surface. For about forty-five minutes, the uterus remained enlarged, and the mouth patulous, when severe after-pains set in, producing firm contraction, and there was no further trouble in the case. The pains continued for several days, and were so severe as to require the free use of opium. The patient made a good recovery.

Dr. Wilson stated that his experience in the case related was so satisfactory, he should, in a future case of post-partum hemorrhage, in which prompt contraction of the uterus could not be produced, immediately use his hand as a curette to the placental surface, confidently expecting a rapid arrest of the hemorrhage.

The cause of clonic contraction in his case Dr. Wilson was unable to fully understand. For, the pains were efficient during labor, there was no delay in the progress of the labor from beginning to end, the last pain shut the uterus up and forced the placenta into the vagina, and yet the uterus, within a few minutes, was greatly enlarged and poured out torrents of blood. Those who were opposed to the use of chloroform in labor might be inclined to attribute the post-partum atony of the uterus to the anesthetic, yet it had no influence in diminishing the force of the pains or retarding the progress of the labor, even to the point of expelling the placenta. In an experience of twenty-eight years, however, he had had only two cases of troublesome post-partum hemorrhage, and yet had used chloroform in nearly every case of labor he had attended. His first case was in a primipara to whom chloroform was not administered.

Dr. R. A. F. Penrose, of Philadelphia, then read a paper on

THE TREATMENT OF POST-PARTUM HEMORRHAGE.

The author first spoke of the appalling character of such a hemorrhage, and the necessity for instant and efficient treatment. It was in these cases that knowledge meant life, and want of knowledge meant death to the sufferer. A prompt and intelligent treatment he regarded as invariably successful. Dr. Penrose defined post-partum hemorrhage to be a hemorrhage from any of the parturient structures from the moment the child was expelled until the organs had returned as nearly as possible to their condition prior to fecundation. Uterine inertia was the great cause of uterine hemorrhage, but there were other causes, such as partial adhesion of the placenta to the uterus, etc., which must be appreciated in order to apply proper remedies. Again there was a class of cases in which the hemorrhage was due to laceration, and yet another class in which it was due to diseases of the uterus, such as cancer, etc.

The most powerful predisposing cause was a peculiar idiosyncrasy of the woman which gave rise to a peculiar flaccidity of the uterus.

The preventive treatment of post-partum hemorrhage must be based upon a most definite conception of the exciting and predisposing causes which could possibly give rise to the complication.

The design of the paper was to study the relative value of certain remedies to be employed in its curative treatment. The symptom depended upon so many conditions that it was evident many and diverse remedies must be employed. In other words, a remedy which would cure one case might be useless in the treatment of another.

What was the treatment to be employed when the hemorrhage depended upon the most common cause, uterine inertia? The relative value of friction, applications of cold in various ways, of heat as by injections of hot water, exciting reflex contractions by acting upon distant organs, etc., was appreciated by all, and consequently they were passed by. What was desirable was a remedy which could be easily obtained under all circumstances, one which admitted of application in the simplest manner, and, at the same time, a remedy the use of which would not be followed by injurious consequences. A remedy which could always be obtained, could be applied without difficulty, and would be certain to excite sufficient uterine irritation to cause the most inert organ to contract was the actual cautery, and yet it was impossible to employ it because the woman would probably die from the subsequent effects.

Injection of the per-salts of iron into the uterus was, no doubt, an efficient method of treatment, but unfortunately its action sometimes resembled that of the red-hot poker, or actual cautery. Injection of the tincture of iodine was an excellent remedy in some cases, but unfortunately it was not always at hand.

The remedy of which Dr. Penrose wished to make special mention for the arrest of post-partum hemorrhage was *common vinegar.* Since 1854 he had used it with invariably successful results, and in all the cases in which it had been employed by his former students he had received report of only one case in which it had failed, and in that instance there was no reason to attribute the cause of the death of the woman to the use of the vinegar.

The vinegar, as a remedy in the treatment of post-partum hemorrhage, presented the following advantages:

1. It could be easily obtained.
2. It could be easily applied, and instantly, without special apparatus.
3. It always cured the hemorrhage; or, rather, it had not failed in his practice.
4. It was sufficiently irritating to excite the most sluggish uterus to contraction, and yet not so irritating as to be subsequently injurious.
5. It was an admirable antiseptic.
6. It acted upon the lining membrane of the uterus as an astringent.

The remedy was applied as follows: Saturate a rag with vinegar: carry it into the cavity of the uterus, and squeeze it.

In the vast majority of cases, the hemorrhage ceased as by magic when the vinegar passed over the surface of the uterus and the vagina. It could be easily repeated, in case the first application failed.

Should it fail to cause the uterus to contract, which of course was supposable, he would resort to the use of a solution of the persalts of iron. He would do so with confidence that the remedy would arrest the hemorrhage, but also with the knowledge that the patient would be placed in a dangerous position from its effects. He believed the salts of iron were seldom or never to be employed for the arrest of post-partum hemorrhage.

The papers by Dr. Wilson and Dr. Penrose being before the Society for discussion, Dr. James P. White, of Buffalo, thought it scarcely possible that too much time could be spent in the discussion of so important a subject as post-partum hemorrhage. Doubtless, all agreed with Dr. Penrose, that uterine inertia was the most common cause of this dreaded hemorrhage. The remedy proposed by Dr. Wilson he considered very valuable, but he could not see the analogy between the use of the curette in the treatment of polypoid growths, and the use of the fingers within the uterus, when the uterine vessels were patulous and open. Dr. Penrose had introduced to him a new remedy for post-partum hemorrhage, which he was surprised at not having himself used for the same purpose, as he had for years so frequently used acetic acid or vinegar for the arrest of hemorrhage when operating about the uterus or vagina. He did not, however, confidently expect that it would *always* prove effectual in post-partum hemorrhage.

Dr. T. Gaillard Thomas, of New York, thought every one would be struck by the great value of Dr. Penrose's paper, and that though the author had stated he was not going to deal with the etiology, he had nevertheless dealt with it very fully. Dr. Thomas had been in the habit of classifying the causes of post-partum hemorrhage under three heads.

First, from failure on the part of the uterus to contract when there was no mechanical obstruction: uterine atony or inertia.

Second, from the presence of some mechanical interference to the action of a uterus willing to contract.

Third, from a solution of continuity.

In reference to uterine inertia, he raised the question as to whether it was primary or secondary. It was his impression that in a large number of cases it was directly due to mismanagement on the part of the practitioner; that uterine inertia was brought on by the presence of a mechanical interference with the contraction of the uterine fibres; hence the necessity of removing all clots from the cavity of the uterus. The man who considered the third stage of labor as completed with the expulsion of the placenta he looked upon as dangerous. The expulsion of the placenta was not a part of the third stage of labor, though it usually occurred during it. He looked upon it as an epiphenomenon of the third stage, and defined the third stage as a tonic contraction of the uterus. He stated that in nine cases out of ten, if the uterus was well managed, it would contract; that in order to secure safety to the patient, the obstetrician should remain with her from one to twelve hours.

In reference to treatment, he thought, though the remedy proposed by Dr. Penrose might prove to be a very valuable one, yet the idea of its specific action, as also the specific action of any of the remedies which had been proposed, such as iodine, iron, alcohol and water, hot water, etc., should be put aside, as he considered the only virtue possessed by any of them was that of a local irritant.

Dr. Geo. H. Lyman, of Boston, thought that Dr. Wilson did not give any reason why irritation of the placental surface caused uterine contraction. He remembered to have had three cases of post-partum hemorrhage, in all of which the uterus contracted well, and thought that there was some obscure cause, which had not yet been determined.

Dr. John L. Atlee, of Lancaster, Pa., expressed himself as exceedingly gratified with the paper of Dr. Penrose, but as far as treatment was concerned, he had great admiration for that proposed by Dr. Wilson, of Baltimore. It suggested a similar case which occurred in his consultation practice some thirty years ago. When he reached the woman, she was almost in a bloodless condition, only able to speak in a low whisper, and the doctor thought had but a few moments to live. There was no time for vinegar, or iodine, or anything else, except the hand and arm. The doctor quickly passed his hand into the uterus, and by movements of the same, stimulated the uterus into tonic contraction, not removing his hand, however, until the uterine contractions had forced it out. By way of illustration that there were cases where hemorrhage would always occur, the doctor related the history of a case where a woman had given birth to eight or nine children, each of her labors being accompanied by an excessive and almost fatal hemorrhage, though every measure had been taken to prevent it, both previous to and during labor. The hemorrhage accompanying her last labor proved fatal before her physician reached the house.

Dr. A. H. Smith, of Philadelphia, thought if he could impress upon the young men of the profession the importance of what had been said, he would be doing a great service. He had been in the habit of considering post-partum hemorrhage as due to one of two causes: namely, either distention or laceration. If the uterus was empty it would contract, and if it contracted, hemorrhage would cease. This proposition formed the basis of Dr. Smith's treatment. No matter what other treatment was used, Dr. Smith argued that, unless at the same time the uterus was kept empty, success would rarely if ever follow. The main point in the treatment of these cases was to introduce nothing into the cavity of the uterus which would prevent its contraction. He had used hot-water injections in all his cases for the past two years with great success as a preventive measure, and had come to look upon water at the temperature of 110° Fahr., and a vaginal syringe, as an indispensable part of his obstetric armamentarium. The water, which was carbolized, was injected at the same time the clots were turned out, the effect of which was the immediate and permanent contraction of the uterus. By this method the vaginal discharges were greatly diminished in quantity.

Dr. Henry F. Campbell, of Georgia, agreed with Dr. Thomas that it was obligatory on the part of the attending physician to remain with his patient at least one hour after delivery. It was customary with the doctor to raise one end of the bed so as to get the feet of the patient higher than her head, and thus bring gravitation to aid in the arrest of the hemorrhage. Then, after removing the clots, which was done as speedily as possible, a piece of ice was held upon the abdomen, and another placed within the vagina or uterus if it was necessary.

As to mechanical irritation of the placental surface with the fingers, the doctor thought it would be useful. The uterine sinuses have no muscular walls, but by irritating the muscular fibres, whose special duty it is to contract upon these open blood-vessels, the same result was brought about as was obtained by the application of ice or other remedies.

Dr. Campbell wished to give his vote in favor of the use of iodine in these cases, having had an intimate practical knowledge of its workings in cases of post-partum hemorrhage.

Dr. George J. Engelmann, of St. Louis, stated, that though a great deal had been said against the use of iron, yet he had learned to rely upon it. It should never be used until the uterus was thoroughly emptied. It has been his habit to first cleanse the uterus, and then apply cotton saturated with iron. Within the past few months he had seen several cases of post-partum hemorrhage, all of which had been treated in the above way, the result being a speedy recovery; no clots, no pain, no bad symptoms.

Dr. James B. Trask, of Astoria, L. I., stated that an analysis of most of those cases in which iron had been beneficial, would show that the benefit was due, not to its styptic, but to its irritant action.

Reference was made to a discussion upon this subject, which took place two or three years ago, before the London Obstetrical Society, in which Dr. Playfair reported some cases where bad effects had unquestionably resulted from the use of iron. The coagulated blood gave rise to thrombosis and septicemia, which resulted in death to the patient.

The doctor considered it an implied contract that a physician attending a case of labor should go prepared to meet any emergency. He always carried iodine with him when going to a case of labor, to be used either to prevent or arrest excessive hemorrhage.

Dr. N. Bozeman, of New York, thought, though it was perfectly evident that the teaching of Dr. Thomas ought to be followed, it would not in all cases be effectual. The efficient use of the arm and hand had been set forth, but it should not be forgotten that the obstetrician has two hands as well as one. Ice was a most valuable remedy in these cases, and might be applied to the abdomen with one hand while the other was clearing the clots out of the uterus. The uterus, during all this time, should be grasped, as a surgeon would grasp the femoral artery in secondary hemorrhage after amputation. This pressure of the hand upon the uterus should be continued until the organ was in a state of tonic contraction.

Dr. James R. Chadwick, of Boston, stated he had used the perchloride of iron in four cases. In three of these, the uterus was first washed out with a disinfectant solution of permanganate of potash, and all of them resulted favorably; but, in the fourth case, where he neglected to first use the disinfecting wash, the woman died. Though the above experience was very limited, the doctor thought it indicated the great danger of the perchloride of iron.

A very good remedy in these cases was the hypodermic injection of ether, which Dr. Chadwick had used three times within the past year, with the effect, within two or three minutes, of having the uterus close up, and, what was curious, in one case the woman was deeply etherized at the time.

Dr. Barker remarked that one of the predisposing causes to post-partum hemorrhage had not thus far been mentioned in either of the papers, or in the discussion, and that was a hemorrhagic diathesis. The form of uterine hemorrhage, the most difficult to control, was frequently, but not always, associated with anemia. Hence it was very important that, previous to parturition, the patient should be put on prophylactic treatment for the cure of the anemia.

Dr. Barker related in detail the history of a case of this kind which had occurred in his practice. The patient had come to New York to be attended by him in her third confinement, the hemorrhage at her two previous confinements having been so severe that, in each instance, it took two or three years for her to recover fully from the effects. Iron and the chlorate of potash were given sufficiently freely to keep the patient fully under their influence. Claret wine was also ordered. This treatment was kept up for seven weeks when she was confined. Her general condition had improved. In spite of every precaution which had been taken, the uterus, after delivery, filled with blood, but the clots were squeezed out without introducing the hand into the uterus. For six hours and a half Dr. Barker or his assistant made firm compression of the uterus through the abdominal walls. She made a good recovery, there being no further hemorrhage.

A very rapid birth was liable to be followed by uterine inertia, and consequently hemorrhage, unless stimulants were applied.

In reference to treatment, he agreed that, in case all other remedies failed, there was no method so good as the introduction of the hand into the uterus, and its retention there until actually expelled by uterine contractions. Whenever the doctor introduced his hand into the uterus, it was never withdrawn until driven out by the contractions of the uterus. He insisted very strongly upon this point; at the same time, he considered the cases quite rare which, when all other methods had been resorted to, required the introduction of the hand. He had, in his twenty-four years of obstetric hospital service, seen three or four cases of traumatic injury to the cervix uteri, which he attributed to the intro duction of the hand within the uterus. This cause of the injury was not insisted upon, for it might have been due to the passage of the fetus. In one case, however, the history of which he gave, the injury was evidently due to the introduction of the hand within the uterine cavity.

Dr. Wilson, of Baltimore, remarked that all were agreed, if the uterus was contracted, there could be no hemorrhage. He could not agree with Dr. Barker that, in cases of post-partum hemorrhage, when all the parts were fully relaxed, any injury to the soft parts was liable to result from introduction of the hand into the uterus. He had never met with injuries that confirmed Dr. Barker's views. He was averse to using any means which would cut off, at any future time, the use of the hand. His hand was the therapeutic agent upon which he relied. He had never used iron, and thought he never would.

Dr. James D. Trask, of Astoria, L. I., did not wish to be understood as saying that he considered that there was any specific action of iodine in these cases.

Dr. Penrose, after all that had been said, still considered the remedy he had proposed a valuable one, especially on account of its accessibility and ready application. It furnished a sufficient amount of irritation to excite the most dormant uterus to contraction, but not sufficient to give rise to any trouble. He agreed with Dr. Barker that the hand should not needlessly be introduced into the uterine cavity.

There being no further discussion, the President, Dr. William Goodsell, of Philadelphia, read the

ANNUAL ADDRESS
ON
NERVE-TIRE AND WOMB-ILLS.

The speaker opened with a pleasant greeting to all, and then referred in fitting words to the deaths of two of the Society's Fellows which had occurred during the past year. The President of the Society, Edmund Randolph Peaslee, was a man of high ability, great acquirements, and unostentatious learning, a man of inflexible honor and rare purity of life.

The other Fellow whose death was mourned was the distinguished ovariotomist, Washington L. Atlee.

Vale Peaslee! *Vale* Atlee! *Valete sed non in æternum.*

As, thus far, none of the contributions of the Society had been devoted to the subject of Diseases of Childhood, they in connection with social problems, such as Preventive Measures, Criminal Abortion, Sexual Excess, Dress, etc., were suggested as subjects for future contributions.

NERVE-TIRE AND WOMB-ILLS, OR THE RELATION OF NEURASTHENIA TO THE DISEASES OF WOMEN.

It was considered that, in the yet young and brilliant school of gynecology, there was a tendency to make too much of the womb and its annexes as causes of so-called female disorders. Since there was in man an instinct of causality, which craves to be satisfied, we were prone to base far-reaching conclusions on fragmentary evidence or on indifferent data; to mistake coincidence for causation. In these days of mental overstrain, nerve-tire or neurasthenia was so common a disturbance in our over-taught, over-sensitive, and over-sedentary women, that in its treatment every physician had an abiding interest. It was manifested by hysteria, by spinal irritation, and by a crowd of reflex symptoms, among which those of a uterine complexion often overshadowed and indeed outlasted all the others. The general pathology of such a neurosis was not perfectly clear, but it probably consisted essentially in mal-nutrition of the nerve-centres, followed by disturbances in the circulation from weakened innervation. These secondary disturbances consisted of local anemias and of local hyperemias.

The treatment recommended was that proposed by Dr. S. Weir Mitchell, and so well described by him in his work entitled "Fat and Blood, and How to Make Them." The results of the rest, of the massage, of the electricity, of the seclusion, and of the feeding which constitute this treatment had far surpassed Dr. Goodell's expectations. The details of three cases successfully treated by this method were given. The therapeutic effects of massage and of electricity were very analogous, but they needed a somewhat extended explanation. The four principal manipulations of massage were:—

1. *Effleurage*, viz., stroking, friction, or surface rubbing.
2. *Pétrissage*, kneading or deep rubbing.
3. *Tapotement*, tapping or percussion.
4. Passive and active motion.

The cases cited were more commonly treated with the faradic current, the galvanic current being reserved for stubborn and deep-seated pains.

The plan of treatment recommended was particularly adapted to that large class of uterine disorders which came from sexual excess.

The Society then adjourned to meet at 3 P.M.

Second Day—Afternoon Session.

The Society was called to order at 3 P.M. by Dr. Goodell.

The first paper was read by DR. WM. H. BYFORD, of Chicago, on

DERMOID TUMORS OF THE OVARIES.

The paper embraced the histories of four cases, with remarks upon the theories concerning the formation of these tumors. In the *first* case, the patient was eighteen years old when she first noticed an enlargement in the left iliac region. The tumor increased in size, was tapped, and about ten quarts of fluid removed which contained the ovarian cell; but after tapping, the sac rapidly refilled, and subsequently ovariotomy was performed. The tumor obtained was not a true dermoid cyst, but a complex dermo-ovarian tumor which had originated in a Graafian follicle that inclosed tegumentary element. There were no teeth found, but there was present undoubted colloid fluid and an abundant crop of dark-brown hair. In the *second* case, the patient was aged forty-three years, and the mother of one child. The tumor was monocystic, contained upon its inner surface a thick tegumentary covering, upon which was a mass of hair nearly the size of an orange. There was no evidence of either bony or dental tissue; the fluid was not in the least tenacious or colloid in appearance. In the *third* case, the patient was thirty years of age, and the mother of four children, the youngest being three years old. Ovariotomy was performed nine months after the tumor first made its appearance. The tumor was monocystic, very large, and originated in the left ovary. About one-fourth of the inner surface of the sac was literally filled with pieces of bone. The greater number were from half an inch to two inches in length, and varied from an eighth to one-fourth of an inch in thickness. They were not attached to each other, and were easily removed by the finger. There were also found more than one hundred imperfect incisor teeth distributed over the whole surface, and only slightly attached; there was also abundance of tegumentary structure and hair. The tumor was regarded as a true dermoid cyst of the ovary. In the *fourth* case, the patient, thirty-five years of age and the mother of four children, the youngest being twenty months old, a tumor had been first noticed in the right iliac region nine years before the operation. It had grown steadily, but slowly, up to the date of the extirpation. It apparently was not influenced by pregnancy. The weight and mobility of the tumor gave the chief inconvenience, producing dysuria, rectal tenesmus, etc., etc. The tumor contained three cysts. The contents of the cysts were nearly identical; each sac was found to contain a mass of hair the size of a lemon; one was red, another blonde, and the third gray; the woman's hair was dark brown. Some of the hair found in the cysts was twenty inches long, and was attached to tegumentary substance closely resembling the scalp; adipose tissue, bones in a great variety of shapes, alveolar nodules, etc. Within each cyst was a half arch of teeth corresponding in shape to one-half of the superior maxilla. The teeth were imbedded in the loose mass, and were not attached to the subjacent bones.

In each case the operation was simple, and each patient made a good recovery. Dr. Byford defined a dermoid tumor to be a cyst formed anywhere in the body, the lining membrane of which was wholly or in part tegumentary in substance. As now understood, the presence of that condition alone justified the nomenclature. The formation seemed to be no less an error of structure than of location. The products were all the same; hair, sebaceous fat, and perspiratory fluid; less constantly, teeth, bone, muscular, nervous, and brain tissues. The addition of bone and muscle, etc., constituted a more complex order of tumor, such as was represented by Case IV. From that point, Dr. Byford discussed somewhat extensively the pathology of these growths. In the next place, the theories regarding their origin were presented. Those theories seemed to represent, with some degree of exactness, the physiology of the times in which they originated. In early times, the theories regarding the origin and development of these curious growths were all vague and imaginary. In the latest and most plausible explanation yet offered, we had the results of the present highly cultivated science of physiology, and, if not absolutely true, there could be fewer rational and scientific objections opposed to it than to any of its predecessors.

The author of the paper then gave a cursory outline of some of the most prominent theories which had, at different ages, been presented to and accepted by a large portion of the profession at the time they were promulgated. The theories were classified under three divisions:

1. Those originating in the imagination alone. 2. Those which had for their basis the superstitions of the times in which they originated, and the people by whom they were entertained. 3. The scientific theories.

Under the last division, Dr. Byford remarked that the following, in the light of the patient research of our own day, and especially from the revelation of the microscope, was by far the most satisfactory and scientific explanation which had been given. The theory was based upon a supposition which at least was physiologically plausible. By many these tumors had been regarded as ovarian pregnancy in which the formation of the fetus was imperfect, or, having undergone development, it had become disintegrated, and the skin, bones, and teeth, being more difficult of destruction, had withstood decomposition and remained in the sac. The theory, however, which was the most plausible was the following: In the early period of ovulation or embryonic development, by some accident or imperfection of formation, an indentation of the blastoderm was produced or somehow existed. In the wonderful trophic energy of that period, the minute depression was inclosed by the approximation of its blastodermic margin, and became an isolated cavity, and the growth and perfection of the embryo were accomplished notwithstanding that early accident of the integrity of the envelope. The depression thus formed involved perhaps both layers of the blastodermic membrane, but the external layer became the lining membrane of the cavity, and was completety cut off from the rest of the blastodermic surface and invaginated with all the essential structures and processes of organization; all its products, therefore, must be retained in the cavity. The contents of that cavity corresponded in miniature with what the formation might have been if the displacement had not occurred. In the further development of the embryo, the portion of the blastoderm covering that adventitious cavity developed its tissues and organs in the ordinary way, and thus inclosed it in the body by the structures usually found to cover it. The internal layer of the blastoderm was doubtless also displaced, but it was not isolated; consequently, its products were never found inside of the tumor. Therefore, in instances where the dermoid patch occupied any of the mucous cavities, the neoplasm would always be found external to the mucous membrane. The theory then served to explain why these hairy tumors were found n the fetus, child, virgin, matron, or male, and with equal plausibility why they might exist in any part of the body. At present it could not be asserted that these tumors were not as common in the male as in the female. They grew more rapidly in the ovaries than in other organs, because of the fluctuation of nerve-force, circulatory supply, and nutritional conditions which occurred in consequence of the process of menstruation, sexual excitement, and the varied states of generation. When situated in the ovaries, their progress was usually tardy, until the age of puberty was reached.

Dr. Noeggerath, of New York, discussed Dr. Byford's paper, and briefly referred to the principal varieties of tumors of the ovaries.

1. The dermoid and colloid, which developed separately in the same way, though in juxtaposition.
2. The dermoid and colloid intermixed with each other, and
3. Those tumors in which a large number of serous cysts had been developed secondarily in the dermoid cyst.

There was a fourth variety or the true dermoid tumor, the origin and deveolpment of which had been fully considered.

A CONTRIBUTION TO THE STUDY OF THE TREATMENT OF THE ACUTE PARENCHYMATOUS NEPHRITIS OF PREGNANCY

was the title of a paper read by Dr. W. L. Richardson, of Boston.

The following is an abstract:—The presence of albumen in the urine of a pregnant woman was by no means so rare as some writers had considered it. Of the last 142 patients admitted to the Boston Lying-in Hospital, it was found in the urine in quantities varying from 42 to 60 per cent. When taken in connection with the other symptoms which were diagnostic of acute parenchymatous nephritis, it became a signal of danger. All obstetricians must have been struck with the very different results which obtained in cases of this disease, which, as judged by the symptoms, were identical. The one terminated in eclampsia, the other did not. How were we to know when to expect a convulsive seizure, and when need we fear no such termination? That question settled, we should have a guide as to when labor should be induced. The object of the paper was to call attention to the necessity of examining the daily quantity of urine passed, as well as the quality of the secretion; the latter showing the presence of a threatened danger, the former revealing the true extent of the danger. The author cited eleven cases as proof of the point he would make. Six of these terminated in convulsions, in five no such result appeared. In the former, the daily amount of urine became less and less; while in the latter, although the accompanying symptoms were as severe or even more marked than in the former cases, yet the amount of urine daily secreted did not fall below a certain amount. The writer summed up the paper by advising that, from time to time, the urine of a pregnant woman be examined, with a view of early detecting the presence of an acute parenchymatous nephritis. When such a disease was shown to exist, a record of the daily quantity of urine secreted should be kept. If that fell markedly below the normal, we should endeavor by proper treatment to re-establish the impaired function of the kidneys, or failing in this, should try to supplement their loss of action by the increased action of other excretory organs If the amount still fell lower and lower, labor should be at once induced, an operation still more imperatively demanded if the pregnancy had advanced to such a period that the child was viable.

The paper being before the Society for discussion, Dr. Thomas, of New York, remarked that one reason why he took so much interest in the paper just read, was because it expressed his own individual views upon the subject. All agreed that there was a great deal of the unknown about this subject. It had been thought there was some poison which ought to have been eliminated from the system, but being retained caused puerperal convulsions.

It had been thought that two things stood to each other as cause and effect, namely, the relation of urea to the quantity of urine passed. It was thought that the chief points to be discussed in reference to the doctor's paper was, when ought we to interfere? When ought we to rely upon medication? When ought we to resort to premature delivery?

Dr. Thomas considered it a serious error when a physician thought it necessary to produce premature labor in every case of albuminuria. He had practised obstetrics for the past twenty-seven years, and during that time he had had only two cases of puerperal convulsions which were not accompanied by uremic symptoms, and in one of those cases uremic symptoms afterwards developed. He wished to be marked as not saying that the uremia was caused by the convulsions, but that it accompanied them. He thought that even the existence of albuminuria should put us on our guard, and that there was a class of cases marked by the following diagnostic signs: In these urine was very freely secreted and, though there was considerable albumen, very little of it solidified upon boiling with nitric acid: the patient had no marked tendency to amaurosis, and there was no stertorous respiration at night.

A second class of cases are those in which a small amount of urine was secreted, which urine, if boiled with nitric acid, became solid for more than one-half of the bulk: the patient having, at the same time, stertorous breathing and marked edema. In these cases, it was believed, nothing would prevent puerperal convulsions short of inducing premature labor.

In the treatment of these cases, it was important to keep up the excessive action of the skin, and for this purpose it was thought that pilocarpin would prove to be one of the most reliable diaphoretics.

In reference to Dr. Richardson's paper, the speaker felt sure, not from the paper, but from his experience, that he had struck upon the key-note of this whole subject, in noting the marked decrease in the quantity of urine.

Dr. John L. Atlee, of Lancaster, considered the instruction which he had received from the man whom he looked upon as the father of American midwifery, namely, the late Dr. Dewees, as of great value. The most certain relief in these cases, Dr. D. considered to be the lancet, where there was a full and rapid pulse, as was generally found.

Dr. Barker, of New York, expressed himself as entirely in harmony with all that Dr. Thomas had said, but would not perhaps go quite as far as Dr. Thomas had, if he were to rely on his experience, for he had published several cases of puerperal convulsions where no evidences of renal trouble had been found; yet he was fully informed of the fact that renal symptoms were most common. He had scarcely ever met with puerperal convulsions in a case which had previously been under preventive treatment. His experience was in accord with that of Dr. Tyler Smith, in reference to treatment. The doctor saw a large number of cases every year, but in almost every instance convulsions occurred without the renal secretions having been previously examined. He believed strongly in the value of medical treatment, at the same time he agreed with the author of the paper and Dr. Thomas, that, where there were symptoms in the case which threatened the life of the mother or the child, premature labor should be induced. The symptom which most commonly indicated this procedure was the existence of albuminuria in spite of all treatment. Under these circumstances he had often induced labor. Dr. Barker fully agreed with Dr. Atlee in the value of venesection as a prophylactic. He had advocated it in his writings and reiterated it in his teachings; he had published a paper upon the value of blood-letting in obstetric practice. That plan of treatment supplemented the action of the kidneys and removed a certain amount of poison. When medical treatment failed to sufficiently supplement the action of the kidneys through the skin or the alimentary canal, Dr. Barker believed in venesection, and that it was possible to save lives in this way that could not be saved in any other. One of the effects of blood-letting was to prevent the cerebral lesions which the convulsions produced.

Dr. Geo. H. Lyman, of Boston, thought the paper of Dr. Richardson an excellent one, and that it touched upon the salient points of the whole subject. He had seen one case where the edema of the legs was so great that they fairly cracked open; yet the labor was a normal one and terminated with good results. The distinction which used to be made in his earlier days had been given up, namely, the hysterical, epileptic, and congestive forms of convulsions. He had no doubt but these three forms actually existed, and that the treatment of each should be different. Dr. Lyman regretted the meagreness of our knowledge in reference to the pathology of the disease under consideration. With reference to inducing premature labor, the doctor in so doing would feel afraid of exciting convulsions. He thought the whole trouble in these cases was of nervous origin.

There being no further discussion, the Society adjourned to meet at 10 a.m., September 26th, 1878.

Third Day—Morning Session.

The Society was called to order at 10 a.m., Dr. Fordyce Barker in the chair.

OFFICERS FOR 1879.

The following gentlemen were announced as having been elected officers for the ensuing year.

President—Dr. T. Gaillard Thomas, of New York.

Vice-Presidents—Dr. D. H. Storer, of Boston, and Dr. H. P. C. Wilson, of Baltimore.

Secretary—Dr. James R. Chadwick, of Boston.

Treasurer—Dr. Paul F. Munde, of New York.

Council—Drs. T. A. Emmet, of New York; John Byrne, of Brooklyn; A. H. Smith, of Philadelphia, and G. J. Engelmann, of St. Louis.

For Honorary Fellows—Dr. J. S. Billings, U. S. A., Washington, D. C.; Dr. J. Matthews Duncan, London.

For Active Fellow—Dr. Nathan Bozeman, of New York.

It was decided to hold the next annual meeting in Baltimore, commencing on the third Wednesday of September, 1879.

ALTERNATING ANTERIOR AND POSTERIOR VERSION OF THE UTERUS.

Dr. S. C. Busey, of Washington, selected the above title for his paper, because it set forth fully and succinctly the distinctive features of a case in which the organ, when unsupported by any mechanical contrivance, was always found in the position either of complete anteversion or retroversion.

Dr. Busey reached the conclusion that the elongated and cartilaginous cervix was the predominant, if not the essential factor in causing the alternate anterior and posterior versions.

Three methods of treatment suggested themselves: 1. Amputation of the cervix. 2. Organic fixation of the cervix; and 3. Mechanical fixation of the cervix.

Dr. H. J. Garrigues, of Brooklyn, read a paper on

GASTRO-ELYTROTOMY.

He thought that a study of the history of the operation alone could show why it was not admitted long ago, and gave us a clue to the recent successes as compared with the earlier failures. Dr. Garrigues then gave a brief review of the operation as performed by Joerg, by Ritgen, by Baudelocque, by Physick, and by Sir Charles Bell.

The history taught the practical lesson that Ritgen's attempt was frustrated by arterial hemorrhage caused by extending the incision backwards. Baudelocque's first case showed that even the first puncture of the vagina might cause hemorrhage. Dr. Garrigues proposed, therefore, to make the first opening into the vagina with the galvano-cautery, thermo-cautery, or common cautery, and he also proposed that the external incision should be made parallel with the brim of the pelvis. The operation had been almost forgotten when it was revived by Dr. Thomas, of New York, in 1870, and performed in an improved form, and since that date it had also been performed by Dr. Skene, of Brooklyn. Dr. Garrigues thought it was a question whether there was sufficient room for the operation upon the left side when it was performed by tearing, but believed it to be quite probable. He urged the propriety of the operation; regarded it as less difficult than ovariotomy, and even herniotomy which had been performed many times by practitioners who could not lay claim to exceptional skill. The statistics of the operation were better than those of Cesarean section. Gastro-elytrotomy should always be adopted instead of craniotomy, when the conjugate diameter was two inches and a half or less, and instead of bad cases of embryotomy. It was not intended to supplant any other operation, and in certain cases it would be always excluded. It could not be repeated upon the same side. It was impossible when the head was immovably wedged into the pelvis. It was contra-indicated in cases of atresia or coarctation of the vagina, of obstruction of the vagina by a solid tumor, or when the obstruction was situated in the uterus.

The paper being before the Society for discussion, Dr. Barker remarked that all would admit no subject could be brought before this Society of greater importance than that which was the subject of the above paper, because every practitioner might be called upon to decide whether this operation was to be performed in preference to Cesarean section or craniotomy. He took great pleasure in calling upon Dr. Thomas, of New York.

Dr. Thomas thought the author of the paper had gone over the subject in a very thorough manner. He then referred in detail to the steps by which he was first led to perform the operation and related the history of his first case. Neither he nor Dr. Skene who had several times performed the operation had any undue hemorrhage. Even if hemorrhage should occur, he thought we had very efficient means of arresting it. Dr. Thomas considered the success which had thus far attended the operation for gastro-elytrotomy was, to say the least, sufficient to warrant a trial of it in urgent cases where Cesarean section or craniotomy had been proposed. In New York, during 250 years, Cesarean section had only once been performed successfully, while gastro-elytrotomy had been performed six times in eight years with very favorable results. Mere argument would not keep down a good operation, as had been proven in the case of ovariotomy. Such resistance would no more keep down the operation of gastro-elytrotomy than the course of a comet would be stopped by an ecclesiastical bull. In reference to fistula in the bladder, the doctor remarked that they inevitably closed up. In his case the rent in the bladder closed without difficulty in three weeks. Cellulitis was not at all likely to occur if an opening was left so that antiseptic injections could be freely used.

Dr. Byford, of Chicago, contrasted the operations of hysterotomy and gastro-elytrotomy and considered the evidence in favor of the latter operation. He considered the opening into the peritoneum in the pregnant woman one of the very greatest dangers, on account of the increased vascularity at such times.

The doctor had, previous to this discussion, considered the dangers from hemorrhage very great, and also, in getting into the pelvic cavity, had supposed there would be more difficulty in separating the peritoneum than there seemed to be.

Dr. Campbell, of Georgia, could not see the particular danger of cutting into the peritoneum, and thought that it would be more damaged by tearing it up from the surface over which it is laid than by cutting directly through it. However, after hearing what had been said, he would be in favor of gastro-elytrotomy.

Dr. Bozeman, of New York, rose to call attention to one point in reference to gastro-elytrotomy, which he thought had never been brought properly before the profession, and that was, the surgical anatomy of the parts involved in the operation. He regarded the relative position of the ureters as exceedingly important. He thought it quite impossible to enter the vagina without involving the ureter, and that in three of the five cases where this operation had been performed and where bladder trouble had been mentioned, it was caused by an accident to the ureter and not to the bladder. In such cases the result would be, a uretero-vaginal fistula, the most difficult of all fistulæ to treat. The speaker considered it a great omission on the part of Dr. Thomas not to have mentioned in his first case whether the ureter was involved. He believed the danger above alluded to should always be considered in choosing this operation in preference to Cesarean section.

Dr. Garrigues, in closing the discussion, remarked that, as Dr. Thomas had said there was little danger from cellulitis, and as he had said it was inevitable, a word in defence of his position might be necessary. He considered himself correct in saying, that wherever you have pus, you have inflammation. When the peritoneum was torn from the iliac fossa, suppuration followed, hence the existence of inflammation.

The point upon which Dr. Bozeman had laid so much stress had not escaped his attention, as he had made several observations upon the cadaver in reference to it. He was obliged to select the matter presented to the Society and had purposely left out the anatomy for consideration at another time.

There was not a single book in which a good explanation of the course of the female ureter could be found. He had come to the conclusion, that gastro-elytrotomy could be performed without injury to the ureter, because the opening was made below and parallel to it.

Dr. Garrigues thought, as soon as the operation was performed in the right way, injury to the ureter would be entirely avoided. By the right way he meant that the first incision should be made parallel to the brim of the pelvis. By so doing, it would be parallel to the mouth of the uterus and also to the ureter. A practical demonstration upon the dead body had proven that the tearing continued in the direction of the incision, and was accomplished more readily in a direction parallel to the ureter.

A great difference had been observed in the vascularity of the vagina in its different portions. In the upper and lower portions there were a great number of blood-vessels, while in the middle portion a less number were found.

THE PENDULUM OR OSCILLATORY MOVEMENT OF THE OBSTETRIC FORCEPS.

Dr. A. H. Smith, of Philadelphia, read a paper upon the above subject, of which the following is an abstract: For the safety of the mother and the child, the obstetric forceps should be maintained in the median line and without lateral or pendulum motion. Dr. Smith had insisted upon that principle for more than fourteen years, as being one of the most important in effecting forceps delivery. He looked upon the leverage power of the forceps, ordinarily described as the pendulum or from-side-to-side movement of the handles, as a most dangerous delusion, and that as an aid to the traction efforts of the forceps, it had no existence in fact. The leverage movement was liable to injure the tissues of the mother and of the child, and therefore its influence was most mischievous. There was no British or American authority, except Matthews Duncan, who made so sweeping a condemnation of the lateral movement as did Dr. Smith, and in proof of such statement he proceeded to quote from all recognized authorities in obstetrics. In quoting authorities, he divided them into three classes:—1. Those who claimed an absolute advantage and necessity for the pendulum movement; 2. Those who permitted it, but laid great stress upon its dangers; and, 3. Those who condemned it totally, the latter being Matthews Duncan and the German authorities.

In this country, the only systematic and uniform teaching condemning the lateral movement had been in the Obstetrical School of the Philadelphia Lying-in Charity, where its founder, Dr. Warrington, and his successor, Dr. Wilson, and himself, in connection with his present colleague, Dr. Allen, had taught it. Dr. Smith maintained that there was no uniform expression of opinion, either by the first, second, or third class of authorities quoted, as to how the leverage power of the forceps acted. It was not stated whether it was because it acted as a double lever grasping the head, or whether the double leverage was in itself injurious. Dr. Smith regarded this as an entering wedge by which we should cut away absolutely the pendulum power from any participation in the real forward movement of the head of the child. Various theories had been assigned why this method of extraction should be employed. Some regarded it as a desirable aid to traction, yet subservient to it. Others had taught that it was an absolute necessity in itself, while still others believed that it was tentative to show in what direction traction should be made.

Dr. Smith believed there was no similarity between the leverage or oscillatory power of the forceps and the action of the vectis. The true analogue to the action of the vectis would be in the application of one blade behind or below the head to favor its rotation, and so give impulse to the labor, and bring about its termination, without the necessity of introducing the second blade, as suggested by Fritsch. At this point, Dr. Smith entered upon a mathematical demonstration of the fact that any sway of the handles of the forceps produced a change in the plane presenting coincidently with the plane of the pelvis, and that the farther the handles were removed from the median line the longer was the diameter presented for passage through the pelvis; the diameter of the transverse plane being the shortest diameter involved in the passage of the fetal head. Any variation of that diameter from coincidence of the planes of the pelvis was regarded as an interference with synclitism of the head, the importance of preserving which was a point upon which great stress had been laid by many who advocated the leverage movement. He further believed that the leverage proposed by Barnes, of London, Bedford, and others, as being sufficient without any traction was so far from being an economical expenditure of force that it was an absolute waste of power, that it could not advance the head, but simply expended itself in contusing the tissues of the pelvis. Leverage with traction had the same effect, only to a greater degree.

Dr. Smith further believed that Dr. Galabin's fixed fulcrum was not upon a hard bony pelvis, but upon soft and already contused tissues; and that the pendulum movement involved the necessity of powerful compression of the head and strong and vigorous traction, which amount of compression of the head would enable it to be delivered by direct traction without very much loss of force. He also claimed that the pendulum movement not only compressed the head against the sides of the pelvis, but that it increased the compressing power of the forceps, driving them by pressure upon the forward part of one blade and the backward part of the other. Dr. Galabin had claimed that the leverage movement converted statical into dynamical friction, but Dr. Smith thought it would be much better to remove the friction entirely by side compression and direct traction.

The arguments in favor of direct traction were: 1. That it imitated the operation of Nature; 2. That it expended economically the entire forces in the direction of the motion, in harmony with a well-recognized principle in mechanics. If we drew in the direction of the pelvic axis, we utilized our entire force; if we drew laterally, we expended the force entirely upon the pelvic walls. The argument from analogy was then considered, and the double rack movement, the movement in cork extraction, the removal of a nail from a board, and the movement made in the removal of a ring from the finger were mentioned, all of which Dr. Smith thought could be legitimately used as arguments in favor of his position.

The conclusions reached by the author of the paper were:

1. That the pendulum movements were in direct violation of the teachings of Nature.
2. That they were absolutely useless as an aid to traction.
3. That any virtue they had was in stimulating uterine contractions which themselves acted independently of them.
4. That, so far from diminishing friction, they increased it.
5. That they tended to do injury to the pelvic tissues wherever they were practised, and so far from being especially useful in difficult cases of labor, the greater the difficulty of the case the greater the danger to the tissues.
6. That, instead of being an economy, they were a waste of forces

On motion, discussion on Dr. Smith's paper was postponed until the afternoon session.

The Society then adjourned to meet at 3 P.M.

Third Day—Afternoon Session.

The Society was called to order at 3 P.M. by Dr. Goodell.

Discussion on Dr. Smith's paper, read at the close of the morning session, being the first business in order, **Dr. James P. White**, of Buffalo, remarked that the position taken by Dr. Smith was somewhat different from that occupied by those who had written upon the use of the forceps, yet the suggestion led us to ask ourselves to consider whether we did not do injury by using them too much as a lever. He thought that compression was of some avail, although of less importance than had sometimes been supposed. Traction he regarded as the chief reliance in the instrument, and when it was properly applied, it should be made in the direction of the strait in which the head was situated.

Dr. Barker, of New York, remarked that the point at which the views given by Dr. Smith began to diverge from those entertained by the profession in general was, that we should never carry one extreme of the bi-temporal or bi-parietal diameter along the cavity of the pelvis any faster than the other. In that view, he thought there rested a fallacy, for the author assumed that a central point between these two extremities was a fixed point. Dr. Barker believed that the central point was not fixed, and that both extremities of the diameter moved with the lateral movement of the handles of the forceps, but that one moved faster than the other according as the movement was made to the right or to the left.

Dr. Storer, of Boston, remarked that it was exceedingly important to be fully aware of the amount of pressure which was being applied to the child's head. He then related a case in which the forceps had so compressed the head of the child as to render him idiotic. The child grew to be a man, and there were distinct depressions in the skull made by the forceps at the time of delivery. His plan had been to make traction in the direction of the strait in which the head might be when the instruments were applied. The rule with him was to make the traction without lateral movement; but there were cases in which there might be slight deviation from the rule.

Dr. Penrose referred to the teachings of Dr. Hodge, who said that the forceps should be used as compressors, as tractors, and as levers, and by the teaching of Dr. Hodge he had been guided in the use of the instrument.

Dr. Thomas, of New York, recognized the forceps as tractors, as compressors, as levers, and believed that they possessed another power which had not been mentioned, namely, that of rotators. The forceps should always be used as a tractor, and as a lever only when it must be so employed. The leverage power Dr. Thomas thought was beneficial in cases in which there was an edematous condition of the tissues of the vagina, for by the lateral movement, the obstruction to the passage of the head could be very much reduced, and thus the delivery be very much facilitated. The method of removing a ring from a swollen finger was given as an illustration; first one edge, and then the other being moved so as to gradually overcome the edematous ridge at the distal extremity of the finger. There was no doubt but that the lever motion of the forceps was one which had been greatly abused, but he thought Dr. Smith went a little too far in excluding it altogether.

Dr. Goodell thought that in the gross the views of Dr. Smith were correct, but in detail they were not. The question resolved itself into two factors: 1. Was the lateral movement dangerous to the mother's tissues? and 2. Was it a mechanical advantage to resort to the pendulum movement? With men who were familiar with the use of the forceps, it was a mechanical advantage, and could be resorted to with safety; but in the hands of a tyro it certainly increased the danger to the mother. Dr. Goodell discussed at some length the mechanical principles involved in Dr. Smith's paper.

Dr. Smith, in closing the discussion, remarked, it was allowed that compression of the child's head was produced by the lateral movement of the handles of the forceps, hence its advantage; but if such was the case, why not make compression to the same degree by the blades of the forceps, and save the tissues of the mother from the danger attending the lateral motion?

Dr. Smith wished simply to use such compression as was necessary to remove pressure from the tissues, and by so doing friction was removed. It was because of the friction against the plastic vaginal walls that the head did not advance. Compression alone without traction was vastly preferable to leverage without traction. If compression was made just sufficient to diminish the friction, and the handles of the forceps were kept in the median line, the contraction of the uterus would crowd the head downward. All the gentlemen had agreed that there was danger in the lever power of the forceps, and yet they all wished to have a little of that danger. If dangerous at all, why use it? It was not advantageous to the progress of the labor; for, if the head advanced, it was in spite of the movement, and not in consequence of it.

Dr. H. F. Campbell, of Georgia, read a paper on

RECTAL ALIMENTATION IN THE NAUSEA AND INANITION OF PREGNANCY.

The following papers were read by title:

"Three Cases of Ruptured Uterus." By Dr. T. Parvin, of Indianapolis.

"Leucorrhea considered in Relation to its Constitutional Causes and its Constitutional Effects." By Ex-President Dr. Fordyce Barker, of New York.

"The Early Delivery of the Placenta when Previa: with a Case of Spontaneous Detachment of that Organ without Hemorrhage." By Dr. I. E. Taylor, of New York.

"Treatment of Pelvic Indurations and Effusions." By Dr. E. Van de Warker, of Syracuse, N. Y.

A new Instrument for the Reduction of an Inverted Uterus." By Dr. J. Byrne, of Brooklyn.

"On some Points Connected with the Treatment of Sterility." By Dr. A. Reeves Jackson.

"Improved Tents." By Dr. James P. White.

"A Case of Extreme Anteversion at the End of Gestation; with Remarks on the Treatment." By Dr. I. E. Taylor, of New York.

"A Study of Douglas' Pouch." By Dr. J. R. Chadwick, of Boston.

Dr. Goodell then delivered his closing address, and the Society was declared adjourned, to meet in Baltimore, on the third Wednesday of September, 1879.

REVIEWS OF BOOKS.

LEHRBUCH DER GEBURTSHUELFE FUER AERZTE UND STUDIRENDE. Von OTTO SPIEGELBERG, ord. Professor der Medicin und Director der Gynäkologischen Klinik und Poliklinic an der Universität zu Breslau, Redacteur des Archivs für Gynäkologie. Lahr. Erste Hälfte, mit 76 Holzschnitten und Lithographien, 1877. Zweite Hälfte, mit 68 Abbildungen, 1878.

A MANUAL OF OBSTETRICS FOR PHYSICIANS AND STUDENTS. By OTTO SPIEGELBERG, Professor in the University of Breslau. In two parts, pp. 874, with 144 wood illustrations and lithographs. Lahr, 1877, 1878.

A glance at the dimensions and appearance of this work shows at once that it is intended to be a contribution of some importance to the subject of which it treats. The two large volumes with wide-margined pages, good paper, and large type, make it attractive, while the colored lithographs and some one hundred and fifty wood illustrations, many of them new, increase the feeling in its favor. The name of the author will add to the interest with which it will everywhere be received and examined. It is one which has become familiar to the profession from frequent and valuable contributions to journals, and this is his first addition to the standard literature of obstetrics; at least he so considers it, as he speaks but disparagingly of a little manual published over twenty years ago, and which we remember to have read with both pleasure and profit. In the preface he says, he has found, as have recently other authors in other languages, that the rapid advances made in the science and the art during the last two decades have made a very considerable gap between the teachings of the books and the practice of the schools. How rapidly these advances are still being made, we may judge by finding an apology for the lack of some of the latest points of doctrine, because the first part of the work was prepared for the press two years ago. To bridge over this existing chasm between theory and practice is, therefore, the author's aim and object, and he seeks to effect this purpose by presenting a complete exposition of the obstetrical doctrines of the present.

It will take but a brief examination, we think, to satisfy any one that the author has been successful, so far as making his work complete. It seems to contain and consider every subject connected with obstetrics in that methodical way and with that minute attention which is characteristic of his countrymen. It is at once comprehensive and exhaustive. The author's style is clear, his manner of statement plain, and the work bears well the closer examination of careful and critical perusal. He has attempted to make it, he says, as far as possible clinical, but this is not in the sense in which we use the term, as consisting largely of detailed cases with a commentary on them, but as based upon and answering the demands of practice at the bedside. We do not, therefore, find any long disquisitions upon theoretical points, nor controversial argument upon unsettled questions, but plain and terse statement of doctrine, and, what is better than all, that evidence upon every page that the author is writing from actual experience, and from the fulness of practical knowledge.

In regard to the doctrines and practice of the work, it is our duty to present them briefly for the benefit of our readers, and we shall confine ourselves to a few of the most important portions. Whether these doctrines coincide or conflict with those held here or elsewhere, whether wherein he differs from the past be improvement or merely that variation which every branch of practical knowledge undergoes from time to time at the hands of every able teacher, we leave them to decide. In regard to this, we may well bear in mind what has been better said by another: "The day of authoritative dictation in obstetrics is past, the word of the master is no longer blindly followed or accepted without discussion, and in the interests of progress we may congratulate ourselves that this is so. It is bad for one man to hold, as it were, the keys of science, and to impose his personal ideas, good or bad, upon an entire generation of medical men."[1]

In the chapter on the conduct of labor, we find preference given to the position on the side for the patient, from the time the head enters the pelvis until it reaches the perineum, as being the one in which the direction of the expulsive force is most readily kept in perpendicular direction to the planes through which the head moves. For the exit of the child, however, the position on the back is preferred, as being the best in view of the discomfort attending one who would make the best economy of force. The author thus gives preference to a position which is a departure from what is the well-known general custom of his country, the back being the position during the whole process of labor. But the matter is of interest in reference to the teaching of Schroeder,[2] and we only compare the two because Schroeder's work is the latest work from the same country, which, by means of a translation, has been made familiar to readers of the English language. Schroeder says the best position during the earlier part of the expulsive stage is on the back, and gives therefor the same reason as our author, the greater certainty of perpendicular direction of the force to the pelvic planes! As the head approaches the exit, he would by no means have the position on the back, principally because the head is driven in a more backward direction, and instead of the gravity of the child corresponding with and aiding its progress, it really is an obstacle, as it must be made to rise as it clears the perineum. One argument in favor of the position on the back is given by the author, but we do not find the stress laid on it which we believe it deserves. We allude to the better opportunity it gives for bringing the accessory powers of the abdominal muscles into play. We are prepared to maintain that this position, with an assistant on each side, to grasp either hand and support each knee, is one in which more power can be brought to bear on the child than in any other; moreover, that it is a position which will be instinctively assumed by the woman whenever the expulsive effort becomes great, and this we hold, too, with knowledge of such single experiments as that of Nægele,[3] in which the woman, being left to herself, assumed a position on the left side. In reference to this point, we regret the entire absence of any controversial feature of Dr. Spiegelberg's book, because the subject has been canvassed with some considerable interest of late in Germany, and has been the subject of special publications,[4] and because the greater frequency of rupture of the perineum in the position on the back has been alleged. It is in this respect, of course, that the subject is of greatest interest, and we do not find any admission here that this accident is favored particularly by the position of the patient. As to the frequency of its occurrence, he says it is difficult to decide, since the definition of rupture varies so widely; a rupture extending to the muscular tissue and over 2.5 cm.—an inch—in length, measuring from the frenulum, occurred in the author's clinic 102 times in 3,000 labors—3.5 per cent. He admits the very important facts for the practitioner, that there are cases of so great disproportion between the fetal head and the outlet, as in occipito-posterior positions, that rupture is unavoidable, and that there are perinea which are friable and give way under less strain than ordinary.

His directions for the prevention of this accident are excellent and all that could be desired; we may possibly except his speaking, as he does twice, of stripping back the perineum, since he is writing for students. This measure the practitioner may occasionally, and with great care, resort to, but the student can only with safety have emphatically repeated to and impressed upon him the fact that delivery of the head is to be effected by drawing out, carrying forward, and unfolding the perineum, and never by shortening or stretching it back, which is the way to produce, not to avoid rupture. Pressure of the perineum against the advancing head, the so-called "support," we are plainly told, is not the way to avoid rupture, but it is to be done by favoring the extension movement of the head, its rotation around the pubis as a pivot, with such regulation of the advance of the head as will give time for the perineum to yield and unfold. He is favorable to the "old process with a new name," of placing two fingers in the rectum to crowd the head upward and forward, but thinks it need seldom be resorted to, and cautions against injuring the rectal mucous membrane; he also sanctions, as do most continental writers, a resort to lateral incisions as a means of preventing perineal rupture.

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[1] Joulin: Traité Complet.

[2] Lehrbuch der Geburtshülfe, Bonn, 1871, p. 150.

[3] Ploss: Ueber die Lage und Stellung der Frau während der Geburt bei verschiedenen Völkern. Leipsic, 1872.

[4] Warum lässt man die Frauen in der Rückenlage gebären? Leipsic, 1868. 2d Ed., Breslau, 1870.

The directions given for the removal of the placenta are in accordance with the latest doctrines. We find colored illustrations of the mechanism of the delivery, as formerly understood, from Schultze, and as taught by Matthews Duncan, and now accepted. The delivery is to be effected by expulsion, but the author is careful to point out, by a method not identical with Credé's. He allows no interval between delivery of the child and the institution of measures for the expulsion of the placenta; it is all the same process continued. Pressure is applied to the fundus uteri immediately after exit of the head and continued after the Dublin method. He lays stress upon this as preventing fixed irregular contractions, "hour glass," which may occur if the pressure be intermitted, and emphasizes the doctrine that speedy, regular, and symmetrical contraction of the uterus is what is wanted, a separation rather than an expulsion of the placenta. We think the statement of Playfair,[1] that in nineteen cases out of twenty the finger need never be introduced into the vagina after the birth of the child, or the cord touched, has led to disappointment; indeed we know it has, and may give occasion to unwarrantable effort in this direction. But the author here is careful to teach that it is expression *from the uterus* that is required; removal from the vagina can be better effected by traction on the cord; to press it out of this canal is often painful, sometimes impossible. He repeats this doctrine, emphasizes it by italics, and adds, what is equally worthy of remembrance by the student, that this steady pressure and consequent perfect uterine contraction is the only safeguard against post-partum troubles.

"An abnormal adhesion of the placenta to the uterus very seldom occurs, however often it may be diagnosticated in practice. The cause of the retention is very frequently misunderstood, care enough is not taken to promote expulsion, time enough is not given, removal from within the uterus is resorted to rashly; the placenta is torn, taken away in pieces, and then it was adherent. It is very singular that the most experienced and best disciplined practitioners and midwives have the least to do with adhesions of the placenta, that these are of the rarest occurrence in lying-in institutions, and that also in reports of the Cesarean section we scarcely ever, if at all, read of them."—Page 586.

In tying the cord, a second ligature is recommended, "whereby the placenta is kept full of blood, and is thus more easily expelled." The books used to teach, Dewees especially does, that it is easier expelled when drained of blood, and thus a second ligature should not be applied. Thus *tempora mutantur!*

In Germany, as in England, the administration of chloroform in natural labor is fully justified by the best authorities. We find in the present work not the slightest trace of opposition to its use; it is spoken of as if it never had been opposed. The author well says that, in proportion to the acuteness of the suffering and the depression occasioned by the pains will its benefits be manifested. He carefully distinguishes chloroform anesthesia from chloroform narcosis; the former, obstetrical anesthesia, in no way interfering with labor except by abrogation of suffering, the latter suspending the uterine contractions and differing not at all from anesthesia for surgical purposes. In this respect his teachings are in marked contrast with the Parisian school some of the most eminent members of which have taken the untenable ground that there is no such thing as anesthesia without loss of consciousness, and even go so far as to ridicule the idea of an obstetrical anesthesia.[1] Although he does not enter at length into the question, he finds an explanation of the harmlessness of chloroform in obstetrics in the "increased cardiac and respiratory actions under the stimulus of the uterine contractions." Campbell[2] finds it in the obstetrical effort. The fact is a great deal better than the explanation, and that it is a fact is attested by the experience of the entire world for thirty years past. If we attempted an explanation, it would be that it is to be found, for obstetrical anesthesia, in the small amount given at once, and in the regularity of its administration. For the superior safety of chloroform narcosis in obstetrics we have no explanation. Thus far experience *seems* to show that it is a fact, but our experience has not yet been extensive enough to allow us to settle down upon an unchangeable position. Granted the administration in natural labor solely to relieve suffering, and we have no quarrel with those who would urge caution in its administration, for we have as yet found no reason to believe chloroform narcosis in obstetrics to be different from the same condition in surgery, or to require less watchfulness and care. We would gladly do so if we could, for we rank ourselves among the warmest advocates of this anesthetic in obstetrical practice.[3]

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[1] Treatise on Science and Practice of Midwifery, Am. ed., p. 263.

It is a disappointment to find but the merest mention of chloral, our latest agent for ameliorating the sufferings of labor. It may be used to procure rest and sleep, and for irregular pains, and that is all that is said of it. Morphia by hypodermic injection is evidently preferred for these ends.

From the multiplicity of subjects belonging to the pathology of labor, we select for examination deformities of the pelvis as leading to the author's views upon some of the most important questions in practice, some which have been most warmly discussed, and which are still undergoing discussion because authorities of equally high attainments are not yet in accord in regard to them. The author also has already made valuable contributions to this subject, and he is often quoted by our latest and best authorities. Here he gives us, in addition to his own views, the important advances made very recently by his countrymen, Michaelis and Litzmann, and by Pinard and other late French writers. His estimate of the importance of this branch of the subject, and of the value of recent progress in this direction, is very high indeed.

"So comprehensive and so high in degree is the importance of the narrow pelvis that all other anomalies which interfere with labor stand far below it. Indeed, I do not go too far when I make the declaration that the doctrine of the contracted pelvis rules the obstetrical clinic of the present, and, for the most part, constitutes it. The recognition of this importance is essentially the conquest of the last decade, and made almost entirely by German obstetricians."—Page 424.

In a foot-note we are told that a perusal of the select works of English and French writers will show that this stand point has not yet been reached by them.

What, then, is the diameter of a contracted pelvis? He propounds this question, and in answering it presents his idea of the term contraction. That a pelvis come within this class it is not necessary that the mechanical obstacles to the passage of the child shall be great, nor that the labor be necessarily a difficult one. There are other factors in parturition to be considered besides the mere fetal exit. One of the recent advances in this subject, first made by Michaelis, is the knowledge of the extent to which pelvic contraction modifies the mechanism of labor, and not only are deviations occasioned from the ordinary rotations of the fetal cranium in its passage through the pelvic canal, but that its engagement in the pelvic brim is modified, that the position of the uterus and the course of the pains also undergo variation. It is to these points, then, that he would look for the use of the term in individual cases, and if the amount of change from the normal is to be stated in figures, he would give one centimetre as the point at which such modifications of labor are occasioned as to justify the use of the term contracted pelvis. Thus he gives the normal, true conjugate diameter as 11 centimetres=4.33 inches; contraction then begins at 10 centimetres=3.937 inches.

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[1] See Pajot, Le Chloroforme dans les accouchements naturels. Paris, 1875, and with regret we add

Depaul, Leçons de Clinique Obstetricale, Paris, 1872, in which, after describing the ordinary way of administering the anesthetic, the patient taking a few inspirations as the pains come on, he says, "Peut-on-dire, en pareille circonstance, qu'on a anæsthésié, c'est-à-dire aboli la douleur? *Évidemment non. On a sacrifié à la pusillanimité exagérée d'une femme qui, ignorant le plus souvent la douleur véritable de l'accouchement, se figure avoir souffert beaucoup moins que si on ne lui avait pas donné de chloroforme!*"

[2] Considerations nouvelles sur l'Anesthesie Obstetricale par le Dr. Charles James Campbell. Memoir presented to the Medical Congress of Geneva, 1877.

[3] Lusk, On the Necessity of Caution in the Employment of Chloroform during Labor. Trans. of Am. Gynecological Society. Vol. II., 1878

"Most authors give this as the diameter of the generally contracted pelvis, and place the figures for the flat pelvis at 9.5 centimetres. I cannot, however, from my experience, agree with them, for I have by the latter often enough observed the influence of contraction upon the position of the head with a true conjugate of 9.5 to 10 centimetres."

Viewed in this light, then, contracted pelves are not of rare occurrence. He admits that there may be wide geographical variations, but says that wherever regular and close investigation of pelvic capacity has been made a very regular percentage of cases of contraction is found. Thus Michaelis and Litzmann found 13 to 15 per cent; Schwarz, 20 to 22; Schroeder, 14, and the author about 14 per cent. This general equality, then, it will be seen, refers to *Germany*. Practitioners in this country among the native population—for our immigrants notoriously give by far the greater proportion of cases here—could furnish, we think, the variations of the other end of the scale.

For clinical purposes, contracted pelves are divided into three classes—the flattened pelvis, the pelvis contracted equally in all its diameters, and those which partake in varying proportions of both. These three forms occur much more frequently than the others, the contraction in all of them being at the brim. The more unusual varieties of pelvic deformity are, however, all described, and indeed illustrated, the illustrations being drawings one-quarter natural size, from specimens in the museum, accompanied with a brief clinical history of the case, and are, therefore, extremely interesting and instructive. But in attempting to go farther than the general classification just given, we find so many admissions as to variations and as to combinations of different forms, that we cannot think the attempt successful, however desirable such a result may be.

For the determination of the amount of the contraction, the author uses both Schultze's and Matthieu's pelvimeters for the external measurements, but for the internal examination advises only the hand. The diagonal conjugate being taken by the finger carried to the promontory, a deduction of 1.5 centimetres=.59 inches to 2 centimetres=.78 inches is to be made for the true conjugate, varying according to the angle from the symphysis to the promontory. In making a study of these cases, he advises the placing of but a low estimate upon the history of former labors.

A deleterious influence is exercised by a contracted pelvis upon all the factors of labor, and these are to be considered quite as much as the mechanical obstacle to the child's progress, especially when the contraction is moderate in degree, for no relation can be established in such cases between the duration of the labor and the amount of contraction. "The higher degrees of contraction excepted, it is never the measure of the contraction which decides the course and result of the labor."

Already in the later months of pregnancy, the influence of a contracted pelvis is shown upon the uterus by its higher position and its unusual movability, the lower segment is not fixed by sinking of the fetus into the upper part of the pelvis. By successive pregnancies, distending and destroying the firmness of the abdominal walls, this condition becomes exaggerated, and the pendulous abdomen is produced with its deleterious consequences. From these conditions of the uterus come faulty positions and presentations.

"In 544 cases of contracted pelvis, I find only 45 --about 83 per cent—of cranial presentations—thus about 12 per cent less than usual; face presentations, 15—2.7 per cent; brow cases, 6—1.1 per cent; pelvic presentations, 25 -4.6 per cent, and transverse positions, 47—8.6 per cent. The frequency of abnormal presentations amounts to 17 per cent, thus about four times as great as under normal conditions; and particularly surprising is the great frequency of face and brow presentations, as the peculiar deviations, occurring from nine to ten times more frequently than usual.

"Besides the abnormal frequency of face and brow cases is also to be observed the frequent prolapse of an extremity, or of the umbilical cord; this is even by head presentations four to five times greater than ordinary, and thus further is explained why, in contracted pelvis, foot cases so far outnumber presentations of the breech."

The unfavorable influence upon the bag of waters is evident. In the flat pelvis there is ample room for escape on each side, and if the membranes are tough, there is cylindrical protrusion, or even a pediculated form, like a new growth. Unequal pressure and resistance lead to early rupture of the membranes, and the unfavorable circumstance of a "dry labor" is added to the other complications. Meantime, there is no descent of the head, and consequently no filling out of the lower segment of the uterus, the next most efficient agent in dilatation; if the cervix is relaxed, it hangs down loose and soft; if undilated, it presents a resistant canal before the head. In some cases, the anterior lip is caught and compressed between the head and the pelvic wall, swells up, and forms of itself an obstacle to the descent of the head; in others, the cervix is ground through by localized pressure, and thus rupture produced. The pains are generally weak in character, and inefficient in action, in contracted pelvis, not as a direct consequence of the deformity, but as sequences of the conditions already given—premature escape of the waters, the movability of the uterus, and the pendulous abdomen. The development of efficient uterine action depends upon a certain advance of or descent of the head; moreover, the accessory assistance of the abdominal muscles does not come into play until the head is engaged, so that there is on every side a lack of that activity of the expulsive powers, always necessary for the completion of the process. Further, all these injurious influences conspire to render the danger greater both for mother and child in every succeeding labor; why and wherefor readily appears. Besides,

"The children of the second to the fourth pregnancies are, on the average, larger, and have harder heads. And, finally, it must not be forgotten that there may remain from former labors inflammatory and other changes of the uterus and its vicinity, which, by another difficult delivery, may be affected, and rise to a dangerous height."

Now, as to the special mechanism of these labors—the entrance into and passage of the head through the pelvis. As the head must be moulded in form to a correspondence with the bony passage, the mechanism varies materially with the kind of deformity which exists, and this is a fact of prime importance, and of great practical value. The process is widely different in the flat from that in the generally contracted pelvis. In the former, the flat pelvis, the head lies in a transverse position at the brim; from exaggeration of the influences existing in natural labor the obliquity of the head is exaggerated, the sagittal suture is found nearer the promontory. The pains continuing, and there not being space enough for the biparietal diameter of the head, the occiput is driven towards one ilium, and the bitemporal diameter engages in the brim. The ordinary flexion does not take place, but the anterior fontanelle is more easily reached than the posterior. The expulsive force being sufficient, the head is driven past the constricted brim, and in the cavity finds room for the occiput to rotate anteriorly, and thenceforward its delivery is as usual. The marks impressed upon it correspond with the mechanism; the principal ones are indentations in front of the ear which rounded the sacral promontory.

In a pelvis equally contracted in all its diameters, it is evident that the mechanism must be different from this. The head in such a pelvis finds equal resistance on every side; flexion then is increased, instead of being lessened, as in the flattened pelvis; the occipital region is forced strongly downwards, the posterior fontanelle towards the centre of the canal, and readily reached. Nor is the head obliged to take a transverse position, but lies in the usual oblique diameter; nor is the sagittal suture so far over towards the promontory. This is the kind of pelvis in which true "impaction" takes place. The form of the head is changed in the direction of its length, and there is an absence of the marks of localized pressure which obtain in the other variety.

The combination of these two forms of pelvic deformity produces a mechanism varying according to the predominance of the one or the other. Into the particulars it is not necessary to go: the difficulties are greatly increased;

severe operative interference is frequently necessary; danger to mother and child is greatly increased, more than half the infants being stillborn.

All this portion of the work is excellent, and contains far more than any text-book with which we are acquainted. We have sketched briefly—very briefly indeed—the leading points of this branch of the subject. And we have been particular to do so, from its bearing upon practice; from its influence in deciding the important question between the use of the forceps and a resort to turning in narrowed pelvis. For the flat pelvis, turning; for the generally contracted pelvis, the forceps; this is the formula growing out of the later studies of pelvic deformity. Playfair just indicates this consideration of these forms of the pelvis in deciding as to choice,[1] but the subject has been ably presented, in our own language, by Dr. Goodell,[2] and as it is there accessible to our readers, we have made but a sketch of it here.

For clinical consideration, narrowed pelves are divided into four classes:

The first includes all down to a diameter of 8.5 cm.=3.34 in.; spontaneous delivery may take place; artificial assistance, if necessary, is almost always successful.

The second carries the contraction down to 7 cm.=2.75 in.; spontaneous delivery only under very favorable circumstances, and only this the flat pelvis; operative help may yet succeed in delivering a living child.

"But the more the diameter sinks below 8 cm. the more doubtful does the case become, and very seldom will the child be rescued; frequently enough it must be destroyed. In this class everything depends upon the shape of the pelvis, the size of the child, the possibility of its adaptation to the pelvis, etc."

In the third class come all pelves with a diameter of less than 7 cm. and down to 5.5 cm.=2.16 in. Here is the birth of an unmutilated child impossible.

The fourth class includes all diameters below 5.5 cm., and in this the Cesarean section is the only resource.

Introductory to the subject of the pathology of labor, the author makes some excellent remarks upon the difficulties of the subject in general, and as to the choice of measures of relief.

"More difficult than the choice is the decision as to the period of their application. Nowhere is the sentence, *occasio præceps*, of more worth than here; delay is generally never remedied, untimely interference is often revenged by its consequences. When there is a choice, let it be ever in favor of the least destructive measure, and seek for help by operation only when forced by necessity. Long waiting and observation consume much time and patience, and the demands of medical life do not always permit them; but in spite of all, never forget that interference is to render relief, that it must be therefore truly help, and not originate new and otherwise avoidable dangers. *It has been proved by statistics that increased frequency of operative interference does not give a decrease of mortality for mother or child.*"[3]

The difficulties which attend the subject in general are heightened in degree and increased in frequency, when the pathological condition is contracted pelvis. For absolute contraction—that which renders passage of the child impossible—the course to pursue is clear. But in the minor degrees, the questions as to rendering assistance, and the time when we shall interfere, as well as the choice of operative procedure, are all more perplexing. "Judgment is difficult" here, with all the advances we have made, even as it always has been.

"There is scarcely another subject in practical obstetrics so difficult to solve in general terms, in the consideration of which any schematic plan is more dangerous, or in which the most accurate individualization is more necessary."

A thorough investigation of the form of the pelvis and the degree of contraction in the case in hand is the first and indispensable requisite. This is to be made under chloroform narcosis and by the passage, if necessary, of the whole hand. Not only the position of the head is then ascertained, but the probability of its engagement in the brim and other points, as its size and degree of hardness, are learned by bi-manual touch, by the breadth of the sutures, the size of the fontanelles, and their distance from each other. By these means, and by comparison of the information gained with that furnished by pelvimetry, the *relative* narrowing is established. It is not so much, he says in another place, the fixing the diameter of the pelvis at a millimetre more or less, as the ascertaining of the general form of the pelvis and the space it offers. This exploration and a close examination of the head will enable us to form a judgment as to the progress and future difficulties of the case.

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[1] Treatise, Am. Ed., pp. 354-5.

[2] The Mechanism of Natural and of Artificial Labor in Narrow Pelves. Trans. of the International Medical Congress, Phila., 1876.

[3] The reference is to Dohrn, Arch. für Gynäkologie, III., p. 282, and VI., p. 321. The italics are not in the original.

At the outset, the author lays down *in limine* the line of conduct to be followed in these cases, one which he has deduced from careful study and long clinical experience, and the one which he urgently recommends others to pursue.

"Wait—wait and watch so long as the spontaneous passage of the head appears possible and devoid of danger. When longer waiting, in view of the safety of the mother, is no longer permissible, perforation and extraction with the cranioclast if the head is high up; the forceps, if it have been forced through the contraction [nach überwundener Enge] and the child be living. In unfavorable positions of the head, its engagement not taking place after reasonable delay, version and extraction. . . . The child's life, in comparison with that of the mother, is always to be lightly estimated [ist immer gering anzuschlagen]; every operative procedure endangers it in a high degree; by spontaneous delivery it fares the best on the average."

What the author has to say upon operative obstetrics is then but an extension and amplification of this paragraph. But to restrict the presentation of his views to this general statement would scarcely be just, and we will follow him somewhat more in detail as to the various operations.

First of all, we are glad to note that the omission of the child from the first lines quoted above is not intentional. But a few paragraphs further on, after detailing the care to be observed while waiting, such as ordering a proper position for the patient, sparing the bag of waters as long as possible, restraining premature expulsive effort, etc., he says interference is to come when "symptoms of danger to the mother, or of threatened fetal asphyxia, appear."

The kind of interference, it is seen, is made to depend largely upon the position of the head and the progress it has made. Thus, for the forceps, the head must have, not only engaged, but fully descended into the cavity of the pelvis. Then, delivery being demanded by failure of power or symptoms of danger, the forceps is the instrument, provided always that it is the mildest, and probably the most rapidly effective means. "Such cases are not frequent; pelves which permit an easy extraction by the forceps seldom present, under the circumstances, an obstacle to spontaneous delivery, and when they do, are rather of the generally contracted kind."

"But here, true to the principle of doing nothing dangerous to the mother for the sake of a threatened child, I would permit only a very mild attempt with the forceps, in view of a probable unavoidable severe contusion of the passages, but rather apply the perforator."

Again: "If, however, the necessity for delivery comes upon us sooner, when the advancing segment of the head has passed the inlet, but with yet a large part of its volume still above it, if the death of the child be established, we shall not, of course, delay with perforation. But if, on the contrary, its life still demands consideration, as version is in these circumstances not to be relied upon, the forceps should be taken into consideration. Here I hold again, true to the principle that the forceps is a *harmless* instrument, that its use in these cases is only justifiable when it can fully grasp the head, and not merely a segment of it; when the head, in position and form, has already adapted itself to the contraction, and this therefore is not too considerable; when the soft parts of the mother can yet probably bear a rapid and considerable pressure without danger, thus appearing as yet not too much contused, and when the child's life is as yet fully uninfluenced by the labor. These conditions not being present, when by longer delay only injury to the mother can be seen, craniotomy is to be performed even upon a living child." —Pages 466–67.

An early escape of the waters, the other conditions being the same, would only make the case worse for the use of the forceps.

"Because here the cervix has already, as a rule, suffered severe contusion, because in the operation it is yet within reach of hand and instrument, the forceps is here a far more dangerous instrument, and therefore in these cases to be far more cautiously tried. I never use them in such cases, but deliver only by craniotomy.—Page 467.

There is no doubting our author's position or opinion as to passing the forceps through an undilated os or as to delivery with it from above the brim. Further on, in giving the indications for the use of the instrument, he repeats these doctrines. It is an extractor, sometimes a double lever, but as such always to be cautiously used, never a compressor. The need being urgent, it may possibly be applied through the undilated os, but only under the highly favorable circumstances of a small head and very dilatable uterine outlet. But until the head has descended into the pelvis, its use is inadmissible.

"The head must stand *zangengerecht; i. e.*, it must have passed the pelvic inlet with its greatest periphery. In regard to this condition for the use of the instrument there are wide differences of opinion. I hold it, however, to be indispensable, because the head above the brim can only exceptionally be seized properly. Almost always it is grasped in its sagittal diameter, and thereby is easily injured. If it be caught in its transverse diameter, its descent in this incorrect position meets with the greatest difficulties and most injurious consequences for mother and child. If the head stands fair and fast in the pelvic inlet, the forceps may be tried, but only tried. The desired result will be attained only under particularly favorable circumstances. Therefore the inexperienced and untrained obstetrician had better not undertake the operation."—Page 818.

This teaching is almost identical with that of Schroeder,[1] an author who has availed himself of the latest teachings as to deformed pelves, and we may look upon it therefore as the result of the recent study of the pelvis, or certainly as the position of the German "School" of obstetrics at present.

It may seem, then, that the use of the forceps is to be restricted to very narrow limits; and while our literature is filled with arguments in favor of a far more frequent use of the instrument, in Germany the reverse is taking place. But there are forceps cases and forceps cases. So widely different are they that it is impossible to derive any benefit or draw any conclusions from statistics made up without regard to the circumstances under which the operations were performed, or the leading features of the cases. We have given the author's views simply in regard to the use of the instrument in contracted pelvis. In regard to the use of it in convulsions, or wherever termination of the labor is demanded by danger to the mother or child, the only scientific ground for its use, he does not differ from authorities in general. But he goes much farther than this, and widens the range of the use of this instrument to bounds which must be satisfactory to its most ardent advocate. Thus, in his introductory remarks, he admits that private practice has exigencies which are unknown to science, and in the special chapter on the instrument gives the following: "But in practice there is yet another indication —*the too protracted duration of the labor, the resulting strain and exhaustion, and the possible danger arising therefrom.* This indication is very lax and allows great freedom of individual judgment. Under it most of the forceps operations take place. Many are only made to shorten the period of suffering, and indeed also only to save the obstetrician's time. It is true, as I have already said, that private practice has other demands and many other considerations than the clinical. *It is, therefore, not always blamable when the forceps are applied merely to shorten the tedium of the labor;* but it must be demanded that these needless operations be non-injurious, that he who undertakes them understands the use of his hands and instrument. Unfortunately, this is not always the case, and intended help is not seldom changed into its opposite."—Page 819.

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[1] Lehrbuch, p. 458. He says: "In contracted pelvis, the forceps should only be applied when the obstacle has been wholly, or at least almost wholly, overcome by the natural powers." Again, and he graphically sketches the conduct of the master and the neophyte. "So long as the head is not so fixed that the hand, in chloroform-narcosis, can pass it, version is indicated. If this be no longer possible, the master of his art may apply the forceps, and by suitable, even though powerful traction, attempt to bring the head entirely through. If the attempt does not succeed, he will know when to lay aside the instrument. But the beginner pulls when the head does not follow; when the sweat of anguish breaks out on him; when he stands in fear of shame from the spectators. He pulls away harder and harder, and at last ends by making of the harmless forceps the most dangerous instrument of all."

We have heard this doctrine before from busy men; we have seen it in the show-cases of the instrument-maker in the shape of small, short forceps, to be slipped up the sleeve and applied clandestinely, but we have never seen it in print before, and cannot let it pass now unchallenged. Here the acceptance of the doctrine that the forceps is the child's instrument, first and so strongly urged by Meigs, was a great advance in obstetrics; the justification of its use solely to alleviate the sufferings of the mother was another. Beyond this we are not prepared to go. Certainly we would countenance no instrumental interference merely to shorten expense of time. Possibly in the author's country youth is under a closer surveillance or feels a deeper sense of responsibility than here; but everywhere the young practitioner should be impressed with even deeper caution than appended to this doctrine above. He should be warned that, when he takes the forceps in hand, unless the exigencies of the case are clearly apparent, however well assured he may be of his hand and his instrument, will make no difference with his judges. He will be held responsible for the *sequences* as well as the *consequences*, even though they have no connection whatever with the operation.

The author's instrument is a combination of the forceps of Busch, Naegele, and d'Outrepont—a substantial, serviceable instrument. Nowhere except in this country did the insane idea ever prevail that a forceps was good in proportion to its lightness and the delicacy of its blades. In this the instrument-makers were largely to blame. As for the new complicated instruments of the French school to measure pressure, to direct traction, to make extraction continuous, they are given short shrift—they are all a "*Spielerei.*"

His estimate of the frequency of the real necessity—the scientific use—of the forceps is a low one, and his practice corresponds: "In 3,600 births it was used 70 times; thus in scarcely 2 per cent, and of these operations no inconsiderable number were only *docendi causa* performed."

The mortality to the child seems high, but we give it as we find it. He quotes from Poppel[1] that it is 11 per cent.

"In my clinic, where, as already said, the instrument is only used under the strongest indications, the proportion of children lost amounted to 20 per cent."

The mechanism of the delivery of the after-coming head, in contracted pelvis, is given in reference to the operation of turning. In the flat pelvis, the advantage gained by the head entering in its bitemporal diameter is detailed, and the well-known process described. In the generally contracted pelvis, if the diameter be not much lessened, the head enters in a state of flexion, and can be pretty readily extracted; under greater deformity, the chin departs from the chest, and the difficulties of the case are much heightened. Most difficult of all, however, is delivery through the flat and contracted pelvis, the mechanism varying as to the predominance of either feature. These almost always demand instrumental assistance.

The class of cases, in contracted pelvis, for which the author recommends version are those in which the head does not engage in the pelvis, but remains movable above the brim, or only pressed firmly down upon it. This may result from three causes: unfavorable position of the head, inefficient pains, and too great contraction of the pelvis. The latter class demands extreme measures; for the first two, version may be performed, sufficient time, of course, having been allowed for the natural powers to effect rectification.

"This operation is here no premature interference with the mechanism, but a change of position as in transverse presentations. It is undertaken with the consciousness that without it the child is as good as lost, but may possibly yet be rescued, and that the mother will fare better, particularly on account of the shortened labor."—Pages 467-8.

When the pains are inefficient, he warns strongly against the introduction into the uterus of instruments to excite them, for fear of entrance of air and infection. Here, after due waiting, he advises version:

"The operation must be performed at the right time, which is not saying that time shall not be given to see how the case will progress under observation, position, etc. For too much must not be expected from version; it is well known that its results depend upon very many circumstances, however great a part individual skill plays in it. It is indeed true that the after-coming head sometimes passes more easily through the contraction than the first-coming. In the mean time, this is always with the assumption that the pelvis is essentially a flat one, and thus offers in its transverse diameter space enough for adaptation; further, and principally, as Litzmann has emphasized, that the head enter with depressed chin, thus with the occipito-mental diameter in the progress-line of the pelvis, so that the old grip of the French school (Levret), the simultaneous pull on chin and shoulders, can be energetically effected, for only then is possible that rapid extraction of the head necessary for the rescue of the child."

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[1] Reference to Monats. f. Geburtsk., xxv., Suppl., S. 43.

"Version is then never to be made as a prophylactic operation, perhaps as a means of shortening the duration of labor, but only when it appears better than waiting, a probable vain waiting for more satisfactory pains, or the adaptation of the head to and engagement in the passage."—Pages 468-9.

We have quoted all we can find of practical moment upon the subject of turning in contracted pelvis, and we think it will be conceded that the work is more notable for what it omits than for what it says, especially in view of its comprehensive character, and in view of the importance of the questions involved, the discussion they have recently undergone, and the differences of opinion which yet exist in regard to them.[1] Thus, we find no statement of any definite diameter as between the forceps and version—all is made to depend on the engagement or position of the head; the few words quoted, showing that with all the more recent authorities he admits the easier passage of an after-coming head, are all there are. We find nothing more as to a decision between the two operations, based on the different variety of pelvis. Again, we fail to find that expression of judgment which we expected, as to the probable influence of the increased external pressure brought to bear in aid of the extracting force upon the future of this operation, for extending back, as does the use of expression, to the time of Pugh, it has been more vigorously applied in the most recent times[2] than ever before, and will doubtless have results which will influence our final judgment. Especially do we note a lack of anything in regard to the amount of force which may be applied to a child, with probable safety in extracting an after-coming head: the very bone of contention between the advocates of the two operations, one side seeming disposed to exaggerate, the other to diminish, its dangers. Both parties will find food for reflection in the four and a-half pages of detail of injuries which the child may suffer from extraction by the feet. One good point the author makes is that extraction of a living child, either by forceps or turning, does not complete the case, for many of these children perish within the first week after birth. It is here, more than anywhere else, that we miss the controversial, perhaps we had better say the argumentative, character of the work, and here we expected it, because we noted, in the literature of the chapter, the titles of Matthew Duncan's and Dr. Goodell's papers.

There is a question forced upon the practitioner in contact with a case of contracted pelvis, and balancing a resort to the operation of turning, which presses with extraordinary weight. It is as to the possible failure of extraction after version has been performed. How will he stand, then, when he finds that the head cannot be brought down, as to terminating the case—better or worse off? Without confidence in his powers of accurate pelvimetry, without much experience in craniotomy, he hesitates to face the possibility of this operation, with the body and neck blocking up the way to the head. In our author we find an answer which does not correspond with the general testimony of authorities in our language. His doctrine briefly formulated is: if the operation be necessary, it is extremely difficult; if easy, it is not needed.

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[1] See the papers read before the Phil. Obstetrical Society by Drs. Ellwood Wilson and Wm. Goodell, this JOURNAL, February, 1876.

[2] "I do not know of any one who has carried out this plan so rigorously as Dr. Goodell, of Philadelphia."—Dr. McClintock, Note to Smellie's Midwifery, Syd. Soc. ed., 1876. Vol. I., p. 348.

"Perforation can only be easy with an accessible head, therefore, when it has already descended a certain distance into and through the inlet; then, however, normal extraction is, as a rule, successful. On the contrary, when the head remains yet above the pelvis, perforation is difficult, for then it can be touched only with the fingers, but certainly cannot be so reached with hand and instruments that the operation can be safely performed."—Page 844.

Again he says: "The introduction of the after-following head into the inlet of the pelvis, its perforation and extraction, is, under the circumstances (when turning has been performed, and the contraction is too great to allow the head to come down), a much more severe operation than when the head precedes, because of the body in the pelvic canal, because the distance of the cranium renders access difficult, and because pressure upon the soft parts by hand and instrument is more intense. The cases in which even my most skilled assistants have been obliged to call upon me for help were just these; relatively very seldom did they need my assistance in perforating the preceding head."[1]—Page 468.

Leishman[2] says, Perforation of the head, when coming after, is "attended with very little more difficulty."

Playfair[3] says that, although "it is certainly not so easy, it is not so much more difficult as to justify the neglect of an expedient (turning) by which it may possibly be altogether avoided." Barnes[4] says there is no great difficulty or danger in perforating after turning. Dr. Goodell[5] says even, "When the brim will not admit the cranial base, the difficulties attending craniotomy and cephalotripsy are, perhaps, greater, but by no means insuperable." Hodge,[6] on the other hand, says that perforation, under these circumstances, is "one of the most difficult operations in obstetric practice." This then must be looked upon as another of the unsettled points of practical obstetrics.

We note two points in regard to other aspects of version. The author describes Smellie's plan for extraction of the head as a grasp of the neck with the fingers of the other hand *on the face*, and attributes the plan of placing fingers *in the mouth* to Levret and Veit. On page 311 of Vol. I., Sydenham Society's edition of Smellie's work, pressure by fingers "*in the child's mouth*" will be found mentioned no less than three times.

In treating of bimanual version, he does not do full justice to our countryman, Dr. M. B. Wright, of Cincinnati, when he says that "a similar or nearly the same proceeding was resorted to *in single cases*, by him and others, before Dr. Braxton Hicks published his paper on the subject. Dr. Wright taught this plan of turning as a *rule of practice* as early as 1854. We are gratified by being able to state, on the most undoubted authority, that Dr. Playfair fully admits Dr. Wright's claim to priority in this matter, and regrets that he did not have the evidence at hand before the second edition of his work went to press.

The lowest pelvic diameter in which craniotomy and extraction of a mutilated child is possible we have seen placed by the author at 5.5 cm. = 2.16 inches. "Below this the operation is possible, but only under very favorable circumstances and by a practised hand." The operation is indicated in contracted pelvis, when the condition of the mother demands it, and this being established, there should be no scruples about sacrificing the child.

"For the child, for the rescue of which no further measures can be taken, is to be considered as dead. To wait long does not help it, and injures the mother. The unpleasant feeling in regard to destroying a living child does not enter into the question. Sentimentality is here least of all in place. Reason alone is to decide. The obstetrician is then to render assistance. To rest with hands in his pockets, in consideration of his own feelings, is to act without conscience and inhumanly. So the advice for this condition of affairs, to make once more an attempt with the forceps, before perforation, in order to avoid the reproach of having destroyed a living child, is to be rejected. Where perforation is demanded by the condition of the mother, such attempts turn the interference which should be her salvation into her destruction."—Page 832.

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[1] For a striking instance see a case in which delivery by the natural powers had several times occurred, reported by Dr. Mundé, this JOURNAL, May, 1873, p. 30.

[2] System of Mid. Second Am. ed., p. 520. [3] Op. cit., p. 356. [4] Obstet. Op., p. 247.

[5] Clinical Memoir, this JOURNAL, August, 1875. [6] System of Obstetrics, p. 276

Having decided that it is to be done, let it be done quickly. This is a maxim which he enforces and repeats: operate while the passages are sound, before infection has taken place, and extraction is to follow immediately upon perforation. Nothing but evil results from delay. The time to operate must be decided upon the principles laid down. Having clearly reached it, "proceed with it at once. Above all, do not be induced to farther attempts with the forceps."

"I have proceeded in accordance with these principles in my clinic for seven years past, and of thirty-three cases of perforation lost only three; while in the preceding five years, of thirteen cases, perforated in general at a late period, seven were lost. Of the three fatal cases out of the thirty-three, two were accidentally so plainly subjected to septicemic infection, that the unfortunate termination certainly had nothing to do with the operation."

"In order, however, that it may not appear that I favor unnecessary perforation, I will here observe that of more than a hundred cases treated in the clinic and dispensary practice in the years 1865–77, over two-thirds were cases of generally contracted pelvis and in full half in the second and third degrees (8.5 — 7 cm. — 5.5 cm.). That want of space was the real cause of the perforation will also appear from the facts that, in almost two-thirds of the cases, the children were males, and about half were primiparous cases. In primiparæ the uterus and the pains are generally more favorable for spontaneous delivery than in multiparæ. Of unfavorable positions, there were three face, five brow, and six of the posterior parietal surface."—Page 833.

In extraction of the head after perforation, the author has but two instruments—the cephalotribe—kephalotryptor he claims as the more accurate name—and the cranioclast. He is opposed to all the bone-forceps, because they tear away only the vault of the cranium, which is not the part which prevents progress. They are therefore useless instruments. The crotchet he condemns as positively dangerous; therefore, "away with it." He uses and gives a cut of Scanzoni's cephalotribe, but laments the want of sufficient pelvic curve, which does not permit a firm grasp of the head when it lies high up and well forward. A pronounced pelvic curve is objectionable, however, when, after crushing, the position of the head has to be changed, in order to bring it down. Here removal and reapplication of the instrument are reprobated on account of injury to the soft parts, and he therefore rejects the doctrines and practice of Pajot in regard to cephalotripsy. The cranioclast is the author's favorite instrument, and he is pronounced in favor of its safety and efficiency. It is not Simpson's instrument of this name, but the improved cranioclast of Vienna. The advantages of this instrument have been so well and so recently presented in the pages of this JOURNAL, in a paper[1] to which the author refers with approval, that we do not need to enter at all into detail in regard to it.

"With skilful handling, the extraction of the perforated fore-lying head, especially if the face be made to come down first, is so simple, so sure, and so harmless, that turning after craniotomy will never again be resorted to, on account of the injuries to which the mother's tissues are exposed by it."—Page 469.

There is but one condition in which he prefers the cephalotribe to the cranioclast, that is, for application to the after-coming head. When the head presents, is high up and movable, the cephalotribe is both difficult to use and dangerous; when the body is already delivered, it is as well-adapted as it is ill adapted in the other case. Nor does he here perforate:

"Because the after-following head can lengthen under the pressure upwards, towards the uterine cavity, and because the basis cranii is directly acted on and crushed. I have therefore never been compelled to perforate the after-coming head; if I could not extract it manually, or if it stood so high that perforation was either impossible or could only be effected with great difficulty, the cephalotribe has always succeeded in the extraction in the most desirable manner. So little adapted as I think this instrument to be for the fore-coming head, so well adapted do I esteem it for the after-coming."—Page 844.

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[1] The Cranioclast as Improved and Used by the Vienna School, by Paul F. Mundé. May, 1873.

After commenting upon the dangers of the Cesarean section, the author expresses strong hopes that this operation has before it a brighter future, because of our improved abdominal surgery by ovariotomy, the adoption of sutures for the uterus against hemorrhage, and the antiseptic method to prevent peritonitis, "which we now look upon only as the result of infection." After no other abdominal operation is peritonitis so frequent, because already from the beginning of birth, the uterus has begun a process of retrograde metamorphosis. An accurate statement of the mortality he believes to be impossible: statistics are useless, because cases are thrown together which have been operated upon under the most varied circumstances. Meantime, he thinks we shall not go far astray when we assume that until recently two-thirds of all the cases have proved fatal.

"I have operated five times: twice on account of deformed pelvis, once on account of uterine cancer, and twice on account of retro-cervical uterine tumor; all five with fatal result."

As we have seen, the pelvic diameter at which Cesarean section is necessary he places at 5.4 cm. = 2.1 inches, but he is careful to state that this is not absolute, especially if the contraction is mostly limited to the conjugate diameter, with a fair amount of space laterally. But it is not alone contraction of the pelvis which calls for this operation. In the section on pathological conditions of the soft parts, he has already described other causes demanding it, such as cancer of the cervix, in cases of which, when the disease has implicated a considerable portion of the lower segment of the uterus, this operation offers more promise for the mother than delivery by other means and consequent violence to the diseased tissues. Subserous cervical myoma is the most frequent, as well as the most serious, of these complications of labor, and there is a most interesting illustration of one of the author's cases. The tumor is almost always retro-uterine, can rarely be displaced upwards, of course cannot be removed, and the dernier ressort of gastro-hysterotomy offers but faint hopes for the mother.

"I have collected 14 cases which were all fatal, with seven children saved. Cazin collected 22 operations in which only 3 mothers and 14 children were saved. If we add to these my case, not included by Cazin, another of mine not yet published, child saved, the case of Braxton Hicks overlooked by both of us, a since published case by Gaillard Thomas, one by Netzel in Stockholm, two by Harris in Am. Jour. Obst., 1872, in which 7 cases 6 mothers were lost and 2 children saved, and we find in literature, 29 Cesarean operations for uterine fibroids, in which only 4 mothers and 16 children were saved: a result which too clearly shows the danger of the operation under these circumstances. Hemorrhage and shock generally cause the fatal result, less frequently is it from peritonitis."—Page 512.[1]

As to the time of operation he advises that it be before the waters break when we have a choice; there is no necessity to wait for any particular degree of dilatation of the os, but the pains should have reached a good degree of energy, that uterine contraction after the operation be assured. We do not find the importance of an early operation urged as it is for ovariotomy, yet it is doubtless the one single point upon which the success or failure of the operation more depends than any other, the one which more than any other has given to the Cesarean section so high a rate of mortality of the past as to influence the teachings of the art and the attitude of the profession towards it.[2]

Preceding the administration of the anesthetic he advises the hypodermic injection of morphia as a means of insuring a steady narcosis and the use of a relatively small quantity of chloroform. This mixed narcosis is several times prescribed in the course of the work and spoken of with favor. The operation is performed under carbolic acid spray and with most careful attention to disinfection. In regard to the unfortunate circumstance of the placenta being attached under the line of incision, he says:

"The counsel to rapidly peel off the placenta laterally and extract the child I could not follow in the three cases in which I encountered this complicaon ; the tissue of the placenta is difficult to distinguish from the uterine, and he finger tears into the spongy mass instead of separating it. It is, therefore, etter to cut rapidly through the placenta, expose the membranes and child, nd extract, the more rapidly the less will be the bleeding."

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[1] All the Cesarean operations for uterine fibroid in our country have proved fatal. Dr. Robert P. Harris, Amer. Jour. Med. Sciences, July, 1878, p. 74.

[2] See the excellent papers by Dr. Robt. P. Harris, this Journal, Nov., 1871, Feb., 1872; Am. Jour. Med. Sciences, April and July, 1878.

Sutures in the uterus are the only sure safeguard against hemorrhage which may occur even several days after the operation, and are therefore considered ndispensable ; the material carbolized silk or wire.

In regard to Porro's operation—the extirpation of the uterus—the author hinks we must await further facts : and as to the new operation, gastro-elytrotomy, he says :

"The results of this operation bear no relation to the difficulties and dangers of its execution ; that which it is intended to avoid by incision of the peritoneum is more surely brought about by the extensive tearing and pulling to which it is submitted ; and then it is not at all certain that the child will pass through the opening which has been made."—Page 856.

We regret to find no agitation of the question of the comparative merits of craniotomy and the Cesarean section, as one of the most pressing questions of the present time. Again, our recently improved abdominal surgery comes in to bear upon the question, and the mass of statistics now being gathered together must help us in coming to a decision upon this question.[1]

At the close of his general consideration of the subject of contracted pelvis, the author gives the mortality which has occurred in his clinic—for the mothers, 7.9 per cent ; for the children, 35 per cent.

"That the degree of contraction essentially influences the prognosis is clear ; yet that it does not to the extent which would *a priori* appear is seen from the fact that under my observation, with a conjugata vera of over 8 cm. (3.14 in.), the mortality of the mothers was still 5 per cent, and of the children 21 per cent."—Page 464.

We, of course, turned with interest to see what he says of the great conservative procedure for the possible reduction of this rate of mortality—the induction of premature labor—especially as we had already learned that he was an opponent of the operation—an operation which had its origin in England, from "a reaction against the preference which English obstetrics has always shown for modes of delivery which are destructive to the child," which has found its home there, but of which, we are told, German obstetrics has finally perfected the technical details, and determined the indications !

The difficulties of the operation as to choice of time for its performance are fully stated. Not only are they in regard to determining the amount of contraction of the pelvis, but far more as to the size of the child and the firmness of its head ; the duration of the pregnancy can never be accurately fixed, and if known, the same period will give wide differences as to the child's head. As to the dangers, he emphasizes the statement that for neither mother nor child is it an interference so devoid of serious consequences as would seem from its insignificant character as an operation. We find, however, no general statement of the mortality ; he refers to his special paper on the subject,[2] to which we have not access, and we must be content with the statistics given by Playfair,[3] which are probably taken from that paper. The great danger to the mother is from septicemic poisoning. much more likely to occur than after natural labor, always especially marked in lying-in hospitals and institutions for teaching. This will improve under our improved knowledge and care, he thinks, and of 12 cases he has had, we presume since the publication of the paper above referred to, he has lost but one, that one, however, from puerperal infection. We have been surprised at the dearth of statistics of this operation in English authorities, and we are therefore obliged to content ourselves with the table of Joulin,[4] which gives a total of 2,064 cases, with 1,967 saved =4.7 per cent lost, children lost, 47.8 per cent.

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[1] See a paper by the lamented Parry on The Comparative Merits of Craniotomy and the Cesarean Section in Pelves with a Conj. Diameter of two and a-half inches or less ; this JOURNAL, February, 1873 ; and one by Dr. Greenhalgh, on the same subject, Trans. of Obstetrical Society of London, 1865.

[2] Ueber d. Werth d künstlich-eingeleit. Frühgeburt bei Beckenenge, etc. Arch. f. Gynäkol. I., 1870, p. 1.

[3] Treatise, p. 857. Mortality to mothers, 15 per cent ; children, 66.9 per cent ; as compared with cases left to nature, which show 6.6 per cent and 28.7 per cent.

[4] Traité complet d'Accouchements, p. 1,130.

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The lowest pelvic diameter at which the operation is admissible is given at 7 cm.=2.75 in.; this for the flat pelvis; for the generally contracted it is placed at 7.5 to 8 cm. In judging of its necessity, far less confidence is placed in the history of former labors than by writers in our language generally. Elliot, however, is fully in accord with the author upon the fact that the same degree of deformity admits of varying results in successive labors.[1]

"I have repeatedly seen women delivered successfully, and relatively easily, who had been condemned to this operation after former severe labors, but who came into the clinic too late for it. Much more weight, in this respect, belongs to the consequences of former labors, the result of pelvic inflammations. When these are present, renewed contusion is doubly dangerous, and therefore in such remains of puerperal attacks is to be found the occasion for the induction of premature labor."

Every mode of performing the operation seems to be noticed and described, but the author gives by far the preference to Kiwisch's method by vaginal douche, exceptionally only hastening the process by cervical dilators.

It is strange enough to find that, in cases where the pelvis presents absolute impossibility of delivery, the author rejects the production of abortion in the mother's interest, unless the nature of the obstruction be such as to promise the least from the Cesarean operation, such as subcervical fibroids, the mortality of which has been already given! In this degree of contraction from other cases, such as pelvic deformity, the mother is not to be allowed this resource, unless she absolutely refuses to submit to the graver operation.

"For when we allow her at the end of pregnancy the right of refusing to undergo a great danger for the sake of her child, as we do when the question is submitted to her between craniotomy and the Cesarean operation, so we must also concede this right to her in the beginning of pregnancy."

The space we have devoted to the subject of contracted pelvis, and the operative procedures consequent upon it, precludes any notice of other portions of this work, or of other subjects, however practical and important they may be.[2] We have followed the author connectedly through a portion of it for various obvious reasons; the most just one is that our readers are thereby enabled to judge of his operative practice as a whole. We think that in many points they will prefer to follow in practice the authorities of our own language. We think that few practitioners will be found here to deny a poor woman, with greatly deformed pelvis, the chance of escape from her perilous condition which abortion affords. For ourselves, we prefer to follow Hodge as to the vectis, an instrument to which Spiegelberg devotes about half a dozen lines of a note, and characterizes "as a traction-lever useless, as a pressure-lever dangerous." As to the forceps—but the expression of individual opinion upon practical points is folly, or perhaps worse, unless by one who can adduce an equal amount of clinical experience with the author to support his views. We, hence, have presented the doctrines of the book, and they can be compared with our present authorities. Whoever judges these doctrines, whether favorably or adversely, should never lose sight of the circumstances under which they were formed—among a population widely different from ours—in hospital practice. Thus, there are two leading precepts running all through the work, wherever interference of any kind is under consideration, they permeate every page, can be read in every line, and even we may say between the lines. The first is, "*spare the maternal tissues;*" the second, "*avoid every possible source of infection.*" Their value may vary with geographical lines, but never anywhere disappears.

As to the work as a whole, it is worthy of the country from which it comes, a fit successor to such works as those of Kilian and Scanzoni. As it is encyclopedic in compass, yet clear and succinct in detail, it deserves the first place as a work of reference for counsel in unusual cases or in an emergency.

Finally the writers of this country have no reason to complain of neglect or oversight; they are frequently quoted throughout the work, and the titles of their papers appear in the literature of very many subjects, while several of the illustrations are taken from and credited to Hodge.

J. C. REEVE.

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[1] Obstetric Clinic, p. 253.

[2] Spiegelberg's views in regard to Puerperal Convulsions are now accessible to the profession of this country by a translation in the Trans. of the Amer. Gynecological Society, Vol. II., translated by Dr. Geo. H. Bixby.

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